# Point Source Bailer Demonstration Report

Former Mather AFB, Mather, California

August 2002





6 August 2002

Dolver Company, Inc. 5117 Shelter Road McClellan AFB, California 95622

ATTN:

Ms. Lynn Mireles

Operations Manager

Subject:

Point Source Bailer Demonstration

Former Mather Air Force Base Sacramento County, California

Dear Ms. Mireles:

MWH Americas, Inc. (MWH) has completed the Point Source Bailer Demonstration at the former Mather AFB using the HydraSleeve<sup>TM</sup> sampler. The attached report summarizes the results of the limited field program, laboratory analytical results, and the statistical comparisons with prior groundwater data at Mather.

Overall, this demonstration suggests that the HydraSleeve<sup>TM</sup> sampler has promise as an acceptable alternative sampling method for large groundwater monitoring programs. The results of the HydraSleeve<sup>TM</sup> sampling compared favorably with historical data, however, the statistical comparison was based on a very limited data set containing a number of variables. Before any final decisions are reached about the acceptance and applicability of the HydraSleeve<sup>TM</sup> sampler, we are recommending that additional field tests should be conducted with paired observations (i.e. two sampling techniques used in the same well) to reduce the affect of variables and maximize the power of the statistical analyses.

MWH is pleased to have the opportunity to work with Dolver Company, Inc. on this interesting project. Should you have any questions, please contact Kurt Condie at (916) 231-4448 or me at (916) 565-4218.

Sincerely,

MWH AMERICAS, INC.

John D. Scott Program Manager

Encl (5)

Distribution:

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## POINT SOURCE BAILER DEMONSTRATION REPORT FORMER MATHER AIR FORCE BASE SACRAMENTO COUNTY, CALIFORNIA

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# ACRONYMS AND ABBREVIATIONS

ANOVA analysis of variance

BRCA Base Realignment and Closure Act

CCL<sub>4</sub> carbon tetrachloride

IRP Installation Restoration Program

Mather Mather Air Force Base

μ mean

micrograms per liter
mg/L milligram per liter
MWH MWH Americas, Inc.
PCE tetrachloretheylene
TCE trichloroethylene

VOCs volatile organic compounds

#### 1.0 INTRODUCTION

MWH Americas, Inc. (MWH) was contracted by Dolver Company, Inc. to perform a Point Source Bailer Demonstration at Mather Air Force Base (Mather). This demonstration was initiated to evaluate point source bailer technology and indicate the feasibility of using the HydraSleeve<sup>TM</sup> point source bailers as an alternative groundwater sampling method. On 18 June 2002, eight HydraSleeve<sup>TM</sup> point source bailers were deployed in eight groundwater monitoring wells at the former Mather by MWH personnel in cooperation with Kent Cordry, president of GeoInsight. On 19 June 2002, the HydraSleeve<sup>TM</sup> point source bailers were retrieved from the groundwater monitoring wells. Eight non-filtered groundwater samples and one filtered sample were collected and submitted to Sequoia Analytical of Sacramento, California for analyses.

The scope of work for the demonstration study was defined in the proposal to the Dolver Company, Inc., dated July 1, 2002. A summary of the scope of work and contents of this letter report are presented below;

- Description and background of Mather.
- Description of the HydraSleeve<sup>TM</sup> point source bailer technology.
- Description of the wells sampled.
- Procedures utilized.
- Table of well construction details of the wells utilized for this demonstration.
- Table of analytical results of the HydraSleeve<sup>TM</sup> groundwater sampling effort.
- Statistical analyses of the HydraSleeve<sup>TM</sup> data compared to historical analytical data from the same wells.

# 1.1 BASE DESCRIPTION AND BACKGROUND

As shown on Figure 1, Mather is approximately 10 miles east of Sacramento and located south of U.S. Highway 50, a major highway connecting Sacramento and South Lake Tahoe. Mather was closed as an active air base under the Base Realignment and Closure Act (BRCA) on



September 30, 1993. At that time, Mather encompassed 5,845 acres (including 129 acres of easements) in an unsurveyed portion of Township 8 North, Ranges 6 East and 7 East.

Environmental cleanup at Mather is managed under the Installation Restoration Program (IRP). Remedial investigations implemented under this program have identified numerous IRP sites. These investigations included the construction of groundwater monitoring wells throughout Mather and beyond the former Air Force Base property. Approximately 509 wells and piezometers comprise the groundwater monitoring program at Mather. The majority of the wells and piezometers are sampled by micropurge methods, 58 wells are currently sampled using diffusion methods, and less than 12 wells are sampled by conventional purge methods.

Groundwater at Mather and vicinity is contaminated by chemicals used during routine Air Force operations between 1918 and 1993. The sources of contamination include industrial activities, equipment maintenance, landfill disposal, dry cleaning, other waste disposal activities, and fuel storage and delivery. Several IRP sites have been identified as sources of groundwater contamination. The main contaminants of concern in the groundwater at Mather are trichloroethylene (TCE), tetrachloretheylene (PCE), and carbon tetrachloride (CCL<sub>4</sub>).



# 2.0 GEOINSIGHT HYDRASLEEVE<sup>TM</sup> NO PURGE GROUNDWATER SAMPLER

The HydraSleeve<sup>TM</sup> sampler consists of a flexible bag, connected by a weight at the lower end and a check valve at the upper end. The empty sampling device is lowered into the well with a dedicated line and the groundwater pressure keeps the check valve closed during descent. Upon reaching the desired sampling depth, the sampling technician exerts an upward pressure on the line causing the check valve to open, thereby obtaining a representative sample. The upward motion is repeated at the desired depth until the sampler is filled. Upon removal, analytical bottles can be filled directly from the sampler. A picture of the HydraSleeve<sup>TM</sup> sampler and how it works is provided in Appendix A.

# 2.1 HYDRASLEEVE<sup>TM</sup> POINT SOURCE BAILER DEMONSTRATION

## 2.1.1 Well Selection

Eight groundwater-monitoring wells were selected for the HydraSleeve<sup>TM</sup> sampling demonstration. The wells selected for the demonstration are presented in Table 1 and their locations are shown on Figure 2. The criteria for the selection of the wells was based on the following:

- Select wells with a history of analytical data for volatile organic compounds (VOCs) and one well with a history of general minerals and/or metals data
- Select wells that are screened in varying lithologies and at varying depths
- Select wells that do not have bladder pumps (which would require removal), but are equipped with dedicated cables to provide ease in the deployment of the HydraSleeve<sup>TM</sup> sampler

To meet the above criteria, seven of the eight wells chosen were typically sampled using diffusion methods only and therefore did not have dedicated bladder pumps. Monitoring well 7-BV-1 monitors groundwater/perched water at landfill LF07 at Site 7 and was selected for the demonstration because historical data was available for general minerals and/or metals data. In



addition, a dedicated bladder pump was not installed in 7-BV-1, therefore the well was typically sampled with a submersible pump by conventional method. A summary of the lithologic materials encountered within each screen interval, including well construction details, and the depth of deployment for each HydraSleeve<sup>TM</sup> sampler is presented in Table 1.

## 2.1.2 HydraSleeve<sup>TM</sup> Deployment

Eight HydraSleeve<sup>TM</sup> samplers were deployed into each of the pre-selected groundwater monitoring wells. The HydraSleeve<sup>TM</sup> samplers were attached to the dedicated cables using stainless steel snap hooks. In the case of 7-BV-1, new nylon line was used to hang the sampler at the center of the screened interval. After connecting the HydraSleeve<sup>TM</sup> samplers to the dedicated cable, they were lowered slowly and carefully to minimize any disturbance within the water column, until the desired depth was reached (i.e., the center of the well screen). Table 1 shows the depth of the HydraSleeve<sup>TM</sup> sampler and associated well screen interval.

# 2.1.3 HydraSleeve<sup>TM</sup> Retrieval and Sample Collection

The HydraSleeve<sup>TM</sup> samplers remained in each well for a minimum of 24-hours prior to their retrieval, to allow for any disturbance to the water column during deployment to equilibrate. Groundwater samples were collected in each of the HydraSleeve<sup>TM</sup> samplers utilizing the techniques described previously (Section 2.0 GeoInsight HydraSleeve<sup>TM</sup> No Purge Sampler). Once the HydraSleeve<sup>TM</sup> sampler was full, it was carefully removed from the well by manually reeling up the dedicated stainless steel cable using a hose reel. Once the HydraSleeve<sup>TM</sup> sampler was brought to the surface, groundwater samples were collected. Groundwater samples were collected by penetrating the membrane of the sampler using a straw-size puncturing device and discharging the sample carefully into the appropriate containers. Following collection, the groundwater samples were labeled, placed on ice, and transported under strict chain-of-custody to Sequoia Analytical laboratories for chemical analyses under a standard turn-around basis (3 weeks). The chain-of-custody for the HydraSleeve<sup>TM</sup> demonstration sampling event and the laboratory analytical reports are presented in Appendix B.



# 3.0 HYDRASLEEVE<sup>TM</sup> GROUNDWATER ANALYSES AND ANALYTICAL RESULTS

Groundwater samples collected from each of the monitoring wells were analyzed for VOCs. Additional groundwater samples were collected from 7-BV-1 and submitted as filtered and unfiltered samples for analyses of metals by method SW6010A. The standard list of 68 VOCs were analyzed using EPA Method 8260B and the filtered and unfiltered sample from 7-BV-1 were also analyzed for 16 metals using EPA 6000/7000 Series Methods.

The laboratory reports from Sequoia Analytical are included in Appendix B and a summary of the analytical results for the HydraSleeve<sup>TM</sup> demonstration are presented in Table 2 along with historical VOC and metals data from the demonstration wells.

VOCs were detected in each of the HydraSleeve<sup>TM</sup> samples collected at concentrations ranging from 0.6 to 57  $\mu$ g/L. Barium, nickel, and zinc were detected in the filtered and unfiltered HydraSleeve<sup>TM</sup> groundwater sample from 7-BV-1. Detected metals concentrations ranged from 0.024 milligrams per liter (mg/L) up to 0.13 mg/L.

## 3.1 STATISTICAL ANALYSES

The HydraSleeve<sup>TM</sup> sample results were compared to historical groundwater data from selected groundwater monitoring wells. The historical data set were from the previous four to six quarters of data that were sampled using diffusion sampling bags with the exception of 7-BV-1, which is sampled by conventional purge methods. The statistical methods used to analyze the data consisted of the following:

- Descriptive statistics of the mean, standard deviation, and maximum and minimum data values of the historical data sets.
- Normal probability testing using normal probability plots and Shapiro-Wilk Test for normality of the historical data sets.



- T-statistic to determine the confidence interval of the mean concentration of the historical data and comparison of the HydraSleeve<sup>TM</sup> result to the confidence interval.
- Wilcox Rank test of the confidence interval of the median of the historical data where nonparametric testing was required and comparison of the HydraSleeve<sup>TM</sup> result to the confidence interval of the median

The descriptive statistics provides general characteristics of the data such as the mean, standard deviation, and data range. During the calculation of the statistics and the confidence interval, a value of one-half the reporting limit was used for data whose concentrations were less then the reporting limit. F-flagged data, which indicates that the data was detected at concentrations below the reporting limit and the value is an estimated concentration, were used in the statistical calculations, using the estimated values. The normality of the historical data was analyzed by plotting the data on a normal distribution plot and using Shapiro-Wilk Test. Data that is normally distributed will appear linear when plotted on a normal probability plot. Shapiro-Wilk Test evaluates whether the data plotted on the normal probability plot is linear. A test value of 0.80 or greater for the Shapiro-Wilk analysis indicates that the data can be assumed normal. It is important to determine that the data is normally distributed to make certain that the T-statistic is valid.

The statistical method used to analyze whether the HydraSleeve<sup>TM</sup> result was consistent with the previous historical data was a T-statistic of the mean concentration of the historical data. If the HydraSleeve<sup>TM</sup> result is within the confidence interval of the mean for the historical data, then the HydraSleeve<sup>TM</sup> result would be considered consistent with the historical data. The hypothesis formulation states the following:

Null Hypothesis;

 $H_0$ :  $\mu = HydraSleeve^{TM} Result$ 

Alternative Hypothesis;

Ha:

 $\mu \neq \text{HydraSleeve}^{\text{TM}} \text{Result}$ 

Based on the confidence interval of the mean  $(\mu)$ .

If the HydraSleeve<sup>TM</sup> result is within the confidence interval, then we do not reject  $H_o$  and consider the HydraSleeve<sup>TM</sup> result to be consistent with the historical data. If the HydraSleeve<sup>TM</sup> result is outside the confidence interval of the mean, then we reject  $H_o$  and accept  $H_a$  that the Hydralseeve<sup>TM</sup> result is not consistent with the historical data.

The T-statistic is used to test the above hypothesis. The T-statistic assumes that the variance of the data can be estimated using the standard deviation, which requires the data to be normally distributed for small sample numbers (n<30). A T-statistic was chosen for the following reasons:

- Majority of the data appears to be normally distributed
- The majority of the data points have concentrations above the reporting limit.
- The T-statistic is more appropriate than analysis of variance (ANOVA) because unequal variances do not bias the T-statistic as they would the ANOVA method.

The decision criteria (i.e., the acceptance of rejection of  $H_o$ ) is indicated by the probability that a Type I error can be made. A Type I error is the rejection of  $H_o$  when, in fact, it is true. This maximum allowed probability is denoted by  $\alpha$  and the confidence level of the test is determined by;

Confidence Level = 
$$(1 - \alpha)$$
.

The decision criteria is based on a confidence level of 95%. A 95% confidence interval of the mean of the historical data will be compared to HydraSleeve<sup>TM</sup> results for each data set. Therefore for any significant trends at a confidence level of 95%, we would have a probability of 5% of rejecting H<sub>o</sub> (and making the determination that the HydraSleeve<sup>TM</sup> result is not consistent with the historical data) when in fact, the HydraSleeve<sup>TM</sup> is consistent.

Data sets with large outliers or that have large numbers of results less than the reporting limit may not be normally distributed. If the data were not normally distributed, based on the normal probability plots and normal probability tests, then the Wilcoxon Rank Test was used to analyze



that data set. The T-statistic assumes that the data are random and normally distributed which is a critical assumption for smaller data sets. Departure from this assumption could affect the power and reliability of the analyses.

The Wilcoxon Rank Test, unlike the T-statistic, is a nonparametric test. Nonparametric tests have the advantage of not requiring the data to be normally distributed. Nonparametric tests do not use the quantitative values of the data but analyze the various ranks of the data. The confidence interval of the median concentrations can be estimated using the Wilcoxon Rank Test to evaluate if the HydraSleeve<sup>TM</sup> data falls within the confidence interval of the median of the historical data. The disadvantage to nonparametric tests is that they are not as efficient as the corresponding parametric procedures. Therefore the nonparametric test requires a larger sample size than the corresponding parametric test in order to achieve the same power of the test. Consequently, the Wilcoxon Rank Test will not be as powerful of an analysis as the T-statistic.

The power of a test is defined as the probability of committing a Type II error. The probability of a Type II error is defined as failing to reject  $H_0$  (and making the determination that the HydraSleeve<sup>TM</sup> result is consistent with the historical data) when in fact the HydraSleeve<sup>TM</sup> is not consistent with the historical data.

## 3.2 RESULTS OF STATISTICAL ANALYSES

## 3.2.1 Descriptive Statistics

The only HydraSleeve<sup>TM</sup> data that were analyzed had a) detections above the reporting limit, and b) detections of analytes that had been historically detected in the wells. Table 2 provides the general statistical descriptive results of the historical data along with the corresponding single HydraSleeve<sup>TM</sup> sample result. As shown in Table 2, most of the analytes had four or more historical values greater than the reporting limit or with J-flags that could be used in the statistical analyses. Seven of the historical data sets contained a majority of results less than the reporting limit and were not statistically analyzed. These data sets included:



- 7-BV-1 for copper
- MAFB 384D for chloromethane
- MAFB 379B for chloroform, toluene, and total xylenes.
- MAFB 379D for toluene
- MAFB 375 with carbon tetrachloride.

## 3.2.2 General Data Quality and Normality Tests

The normality of the historical data sets was evaluated by plotting the data on normal probability plots and conducting normality test using Shapiro-Wilk Test. The normal probability plots for all of the data sets are provided in Appendix C and the results are summarized in Table 3. As summarized in Table 3, the majority of the data sets were normally distributed with the following exceptions which were analyzed with the Wilcoxon Rank Test:

- 7-BV-1 for 1,4-dichlorobenzene
- 7-BV-1 for benzene
- 7-BV-1 for chlorobenzene.

In addition, the data set for 7-BV-1 with 1,2-dichloroethane was directly analyzed using the Wilcoxon Rank Test because of the small number of samples that were detected above the reporting limit.

The data sets that were not normally distributed were analyzed using the nonparametric Wilcoxon Rank Test. In some cases where the normality was uncertain, both the T-statistic and Wilcoxon Rank Test were conducted.

## 3.2.3 Statistical Results

Figures 3-25 provides a) a plot of the historical data versus sample date, b) the 95% confidence interval of the mean for the historical data, and c) the concentration of the HydraSleeve<sup>TM</sup> result for each data set. Also, Table 3 provides a summary of the statistical results from the figures.

Of the 32 data sets, Table 3 summarizes the following observations:

- Eight data sets had significant numbers of historical values below the reporting limit and statistical analyses could not be performed. Of these seven data sets, all of the HydraSleeve<sup>TM</sup> results were also below the reporting limit. By observation, we can conclude that the HydraSleeve<sup>TM</sup> results were consistent with the historical data sets.
- In 16 of the data sets, the HydraSleeve<sup>TM</sup> results were within the 95% confidence interval of the mean for the historical data using the T-statistic; and, in two data sets, the Hydrasleeve<sup>TM</sup> results were within the confidence interval of the median for the historical data set using Wilcoxon Rank Test. Therefore, the HydraSleeve<sup>TM</sup> results were consistent with the historical data.
- In five of the data sets, the HydraSleeve<sup>TM</sup> results were **not** within the 95% confidence interval of the mean for the historical data using the T-statistic; and, in two of the data sets, the HydraSleeve<sup>TM</sup> result was **not** within the confidence interval of the median for the historical data set using the Wilcoxon Rank Test. Therefore, the HydraSleeve<sup>TM</sup> results were not consistent with the historical data sets.
- In three of the data sets, no inferences could be made. In one data set (7-BV-1, vinyl chloride) there was a significant outlier during the sampling period  $4^{th}$  quarter 2000 (Figure 11). This data point greatly skewed the confidence interval. The data set for 7-BV-1 with chlorobenzene had a significantly high concentration reported during the previous  $4^{th}$  quarter of 2002 than the previous samples (Figure 7). The HydraSleeve<sup>TM</sup> sample result was similar to the recent 4th quarter 2002 sample result but fell outside the 95% confidence interval. The data set for 7-BV-1 with ethylbenzene had the historical data all below the reporting limit of 1.2  $\mu$ g/L. The HydraSleeve<sup>TM</sup> result was 1.4  $\mu$ g/L, slightly above the reporting limit. Additional data would be required to accurately evaluate whether the HydraSleeve<sup>TM</sup> result is statistically higher.



Of the 29 data sets where inferences could be made, 83% of the HydraSleeve<sup>TM</sup> results were consistent with the historical data sets. Only five of the data sets (17%) had HydraSleeve<sup>TM</sup> results which were statistically different from the mean concentration of the historical data sets.

A suite of 16 metals was analyzed from monitoring well 7-BV-1 during the HydraSleeve<sup>TM</sup> Sampling (See Appendix B for the list of metals). Historical sampling of 7-BV-1 only included a full suite of metals during the 1<sup>st</sup> quarter 2002 sampling event, and those results were used for statistical comparison with the HydraSleeve<sup>TM</sup>. Prior to 1<sup>st</sup> quarter 2002, groundwater samples from 7-BV-1 were analyzed for only copper and zinc, and these earlier results were also compared to the HydraSleeve<sup>TM</sup> Sampling event. It should be noted that the detection limits for metals reported by the Mather groundwater program differ, in some cases, from those reported by Sequoia Analytical, which was under contract to the Dolver Company, Inc. Where metals were detected and could be directly compared, the following observations were made:

- Arsenic had a concentration of 5.8 micrograms per liter ( $\mu g/L$ ) during the 1<sup>st</sup> quarter 2002 sampling and the corresponding HydraSleeve<sup>TM</sup> result for arsenic was below the laboratory reporting limit of 50  $\mu g/L$ . This comparison was consistent but not definitive since one laboratory reporting limit was relatively high (i.e., 50  $\mu g/L$ ).
- Barium had a concentration of 67.1  $\mu$ g/L during the 1<sup>st</sup> quarter 2002 sampling and the corresponding HydraSleeve<sup>TM</sup> result was 84  $\mu$ g/L. The comparison was consistent.
- Nickel was reported below the reporting limit of 40  $\mu$ g/L during the 1<sup>st</sup> quarter 2002 sampling and the corresponding HydraSleeve<sup>TM</sup> result was 24  $\mu$ g/L. This comparison was consistent but not definitive since one reporting limit was relatively high (i.e.,  $40\mu$ g/L).

For all other metals analyzed in 7-BV-1, the detections were below the reporting limit for both the 1<sup>st</sup> Quarter 2002 and the HydraSleeve<sup>TM</sup> Sampling event.

#### 4.0 CONCLUSIONS

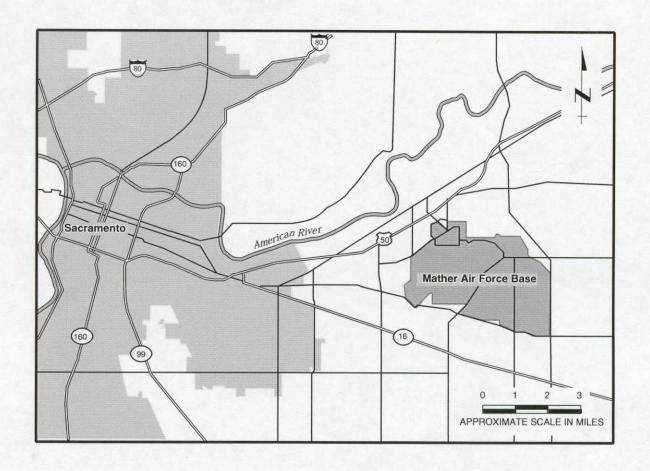
This demonstration and statistical evaluation has produced valid results, but there are some limitations to the confidence in the conclusions based on a) there were a minimum number of wells and data points and b) some of the data may not be totally random (i.e., the data may show trends with time) which reduces the power of the statistical analyses.

To obtain a more definite comparison, one of two possible approaches could be taken:

- 1) Obtain a larger data set to more fully account for natural variables that occur during sampling.
- Conduct paired observations between HydraSleeve<sup>TM</sup> and more conventional sampling techniques in the same series of wells during the same sampling events. Paired observations tend to block out the common variables due to seasonality, hydrogeologic differences and natural concentration gradients, which increases the power of the statistical analyses.

In our opinion, the HydroSleeve<sup>TM</sup> Sampling device shows promise as a reliable alternative sampling tool. More statistical comparisons would be needed before establishing complete confidence in the method, determining its limitations, gaining regulatory acceptance, and making a final decision on deployment.









MATHER AFB
SACRAMENTO COUNTY, CALIFORNIA
LOCATION MAP

FIGURE 1

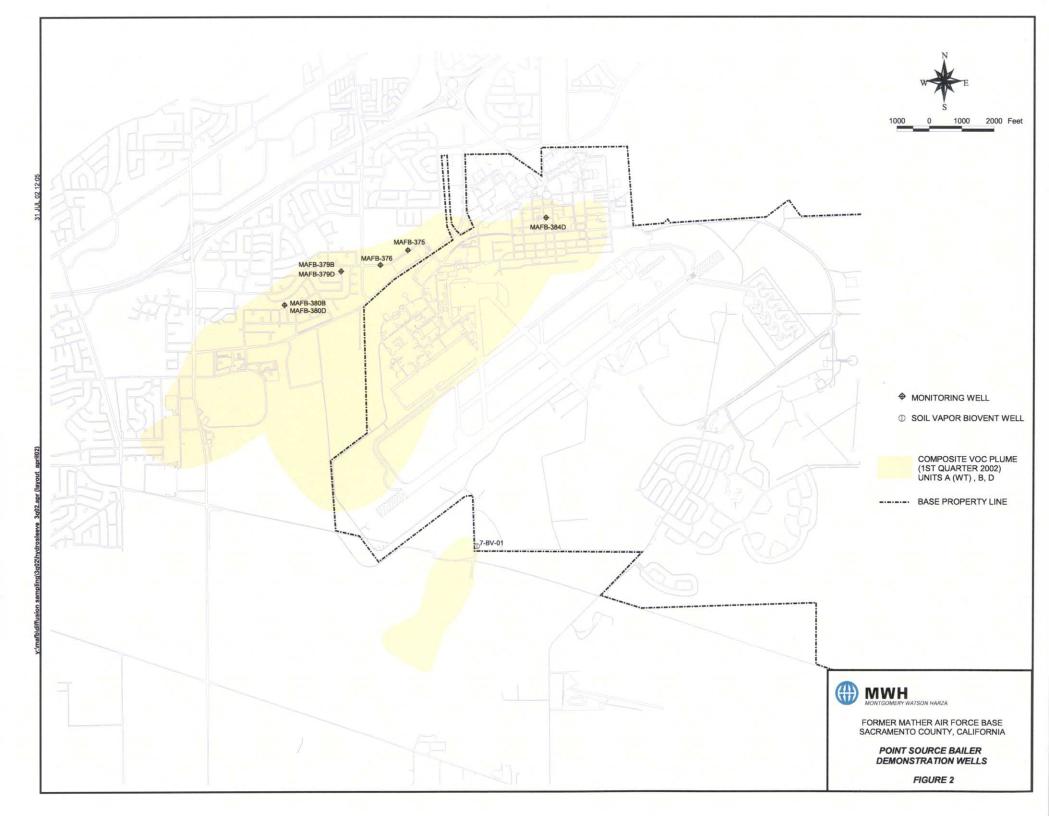


Figure 3
VOC Concentration for MW 7-BV-1
1,2 Dichlorobenzene

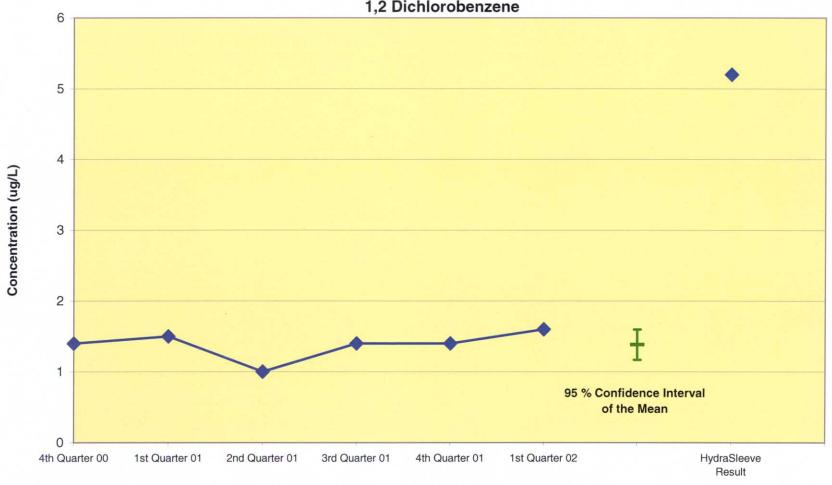


Figure 4
VOC Concentration for MW 7-BV-1
1,2 Dichloropropane

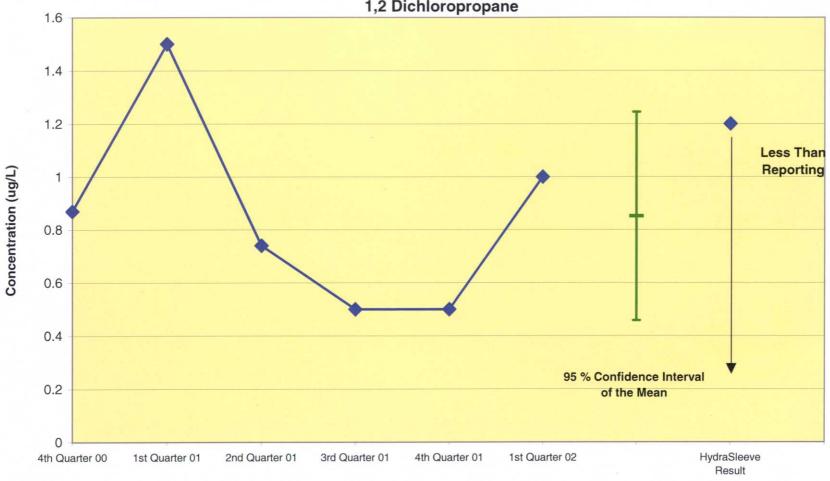


Figure 5
VOC Concentration for MW 7-BV-1
1,4 Dichlorobenzene

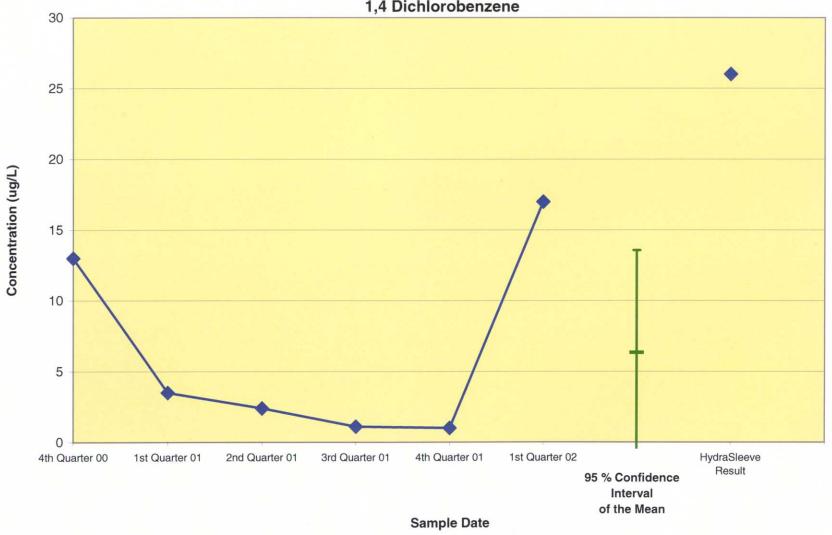


Figure 6 **VOC Concentration for** 

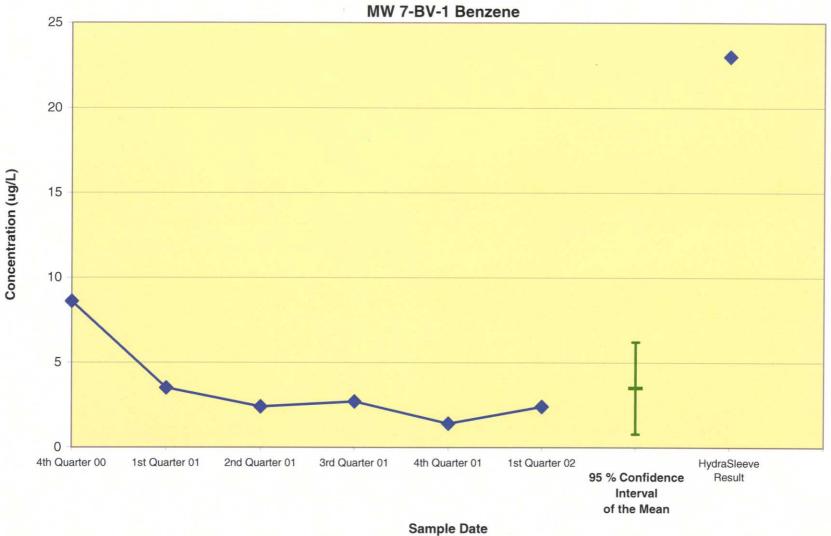


Figure 7
VOC Concentration for MW 7-BV-1 Chlorobenzene 60 50 40 Concentration (ug/L) 30 20 10 0 HydraSleeve Result 4th Quarter 00 1st Quarter 01 2nd Quarter 01 3rd Quarter 01 4th Quarter 01 1st Quarter 02 95 % Confidence Interval of the Mean Sample Date

VOC Concentration for MW 7-BV-1 cis 1,2-Dichloroethene 1.80 1.60 1.40 1.20 Concentration (ug/L) **Less Than** 1.00 Reporting Limit 0.80 0.60 0.40 95 % Confidence Interval 0.20 of the Mean 0.00 4th Quarter 00 1st Quarter 01 2nd Quarter 01 4th Quarter 01 3rd Quarter 01 1st Quarter 02 HydraSleeve

Figure 8

Sample Date

Result

Figure 9
VOC Concentration for MW 7-BV-1
Tetrachloroethene

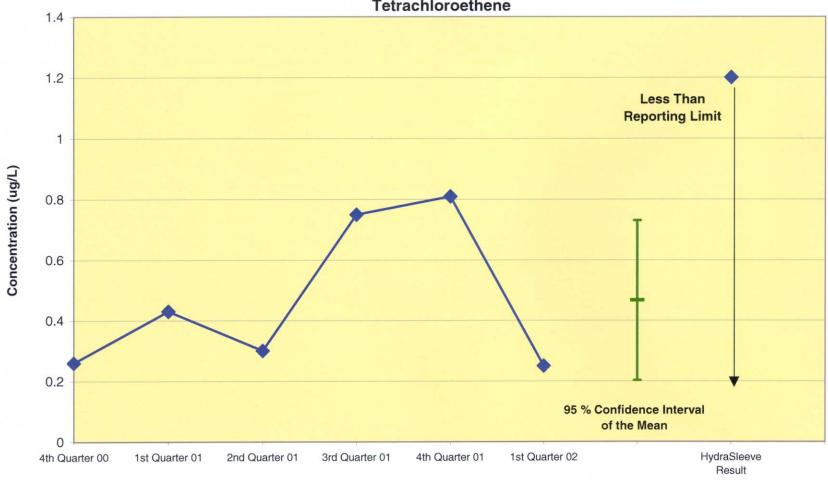
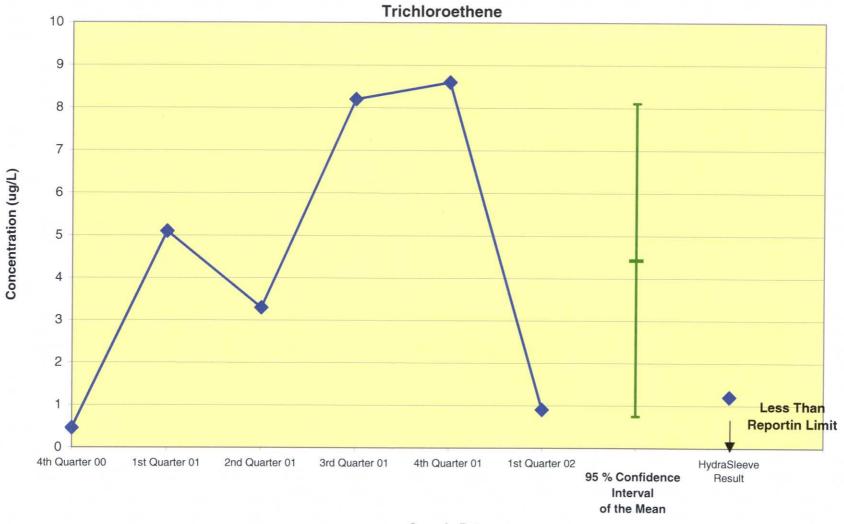


Figure 10
VOC Concentration for MW 7-BV-1



VOC Concentration for MW 7-BV-1 Vinyl Chloride 4.50 4.00 3.50 3.00 Concentration (ug/L) 2.50 2.00 1.50 Less Than 1.00 Reporting Limit 95 % Confidence Interval 0.50 of the Mean 0.00 4th Quarter 00 2nd Quarter 01 1st Quarter 01 3rd Quarter 01 4th Quarter 01 1st Quarter 02 HydraSleeve Result

Figure 11

Sample Date

Figure 12
VOC Concentration for MW 7-BV-1
Zinc

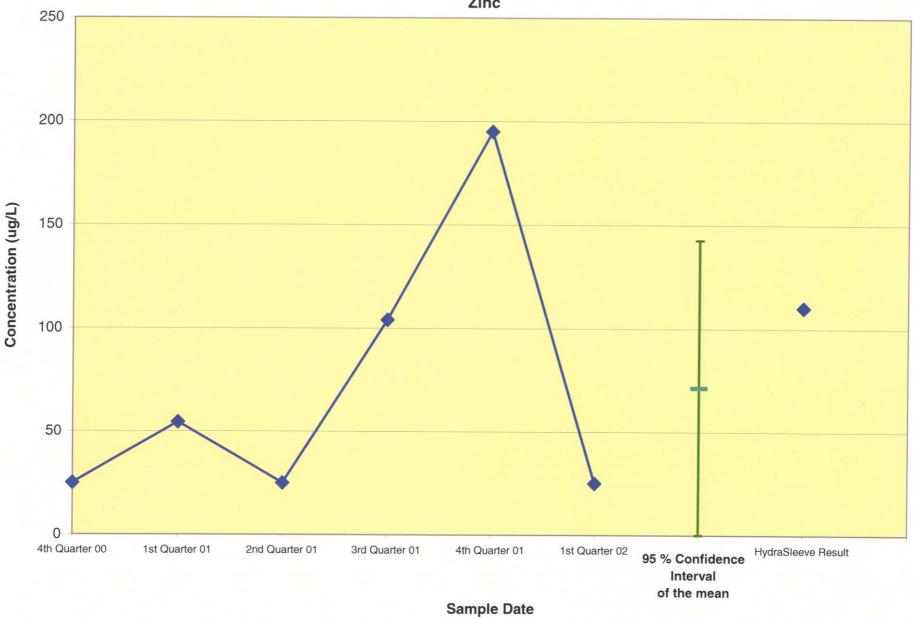
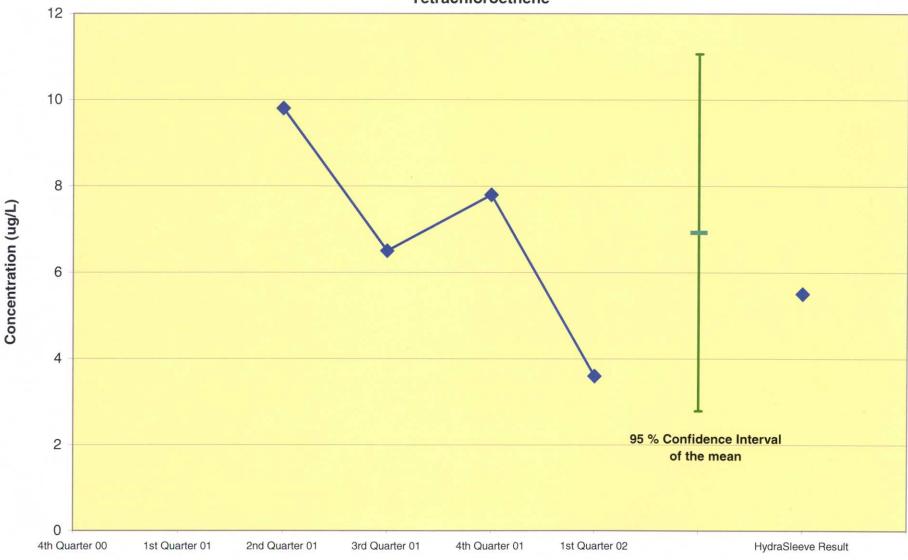


Figure 13
VOC Concentration for MW MAFB-375
Tetrachloroethene



**VOC Concentration for MW MAFB-376 Carbon Tetrachloride** 3 Concentration (ug/L) 2 95 % Confidence Interval of the mean **Less Than Reporting Limit** 0

Figure 14

Sample Date

4th Quarter 01

1st Quarter 02

HydraSleeve Result

4th Quarter 00

1st Quarter 01

2nd Quarter 01

3rd Quarter 01

Figure 15
VOC Concentration for MW MAFB-376
Tetrachloroethene

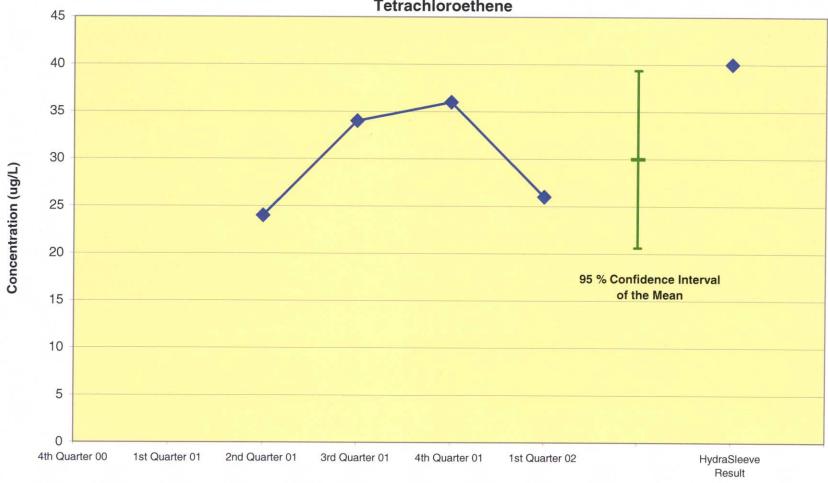


Figure 16
VOC Concentration for MW MAFB-379B
Carbon Tetrachloride

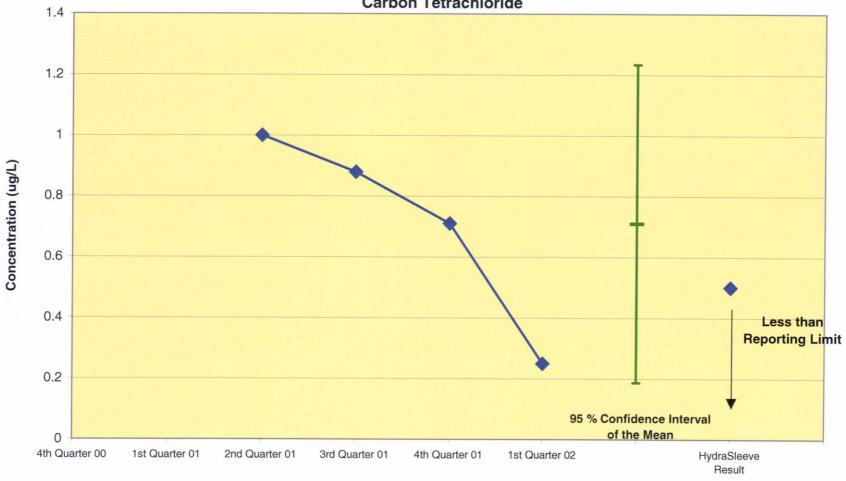


Figure 17
VOC Concentration for MW MAFB-379B
Tetrachloroethene

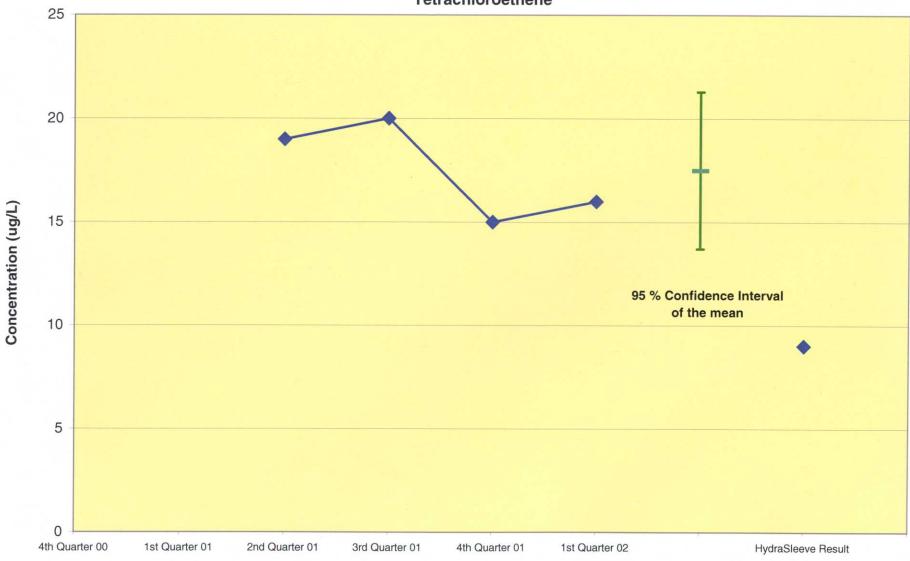


Figure 18
VOC Concentration for MW MAFB-379D
Carbon Tetrachloride

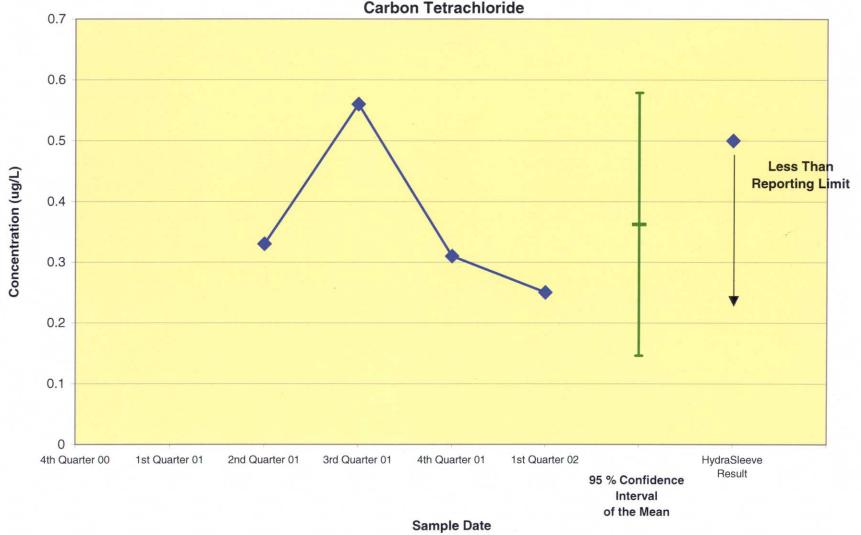


Figure 19
VOC Concentration for MW MAFB-379D
Tetrachloroethene

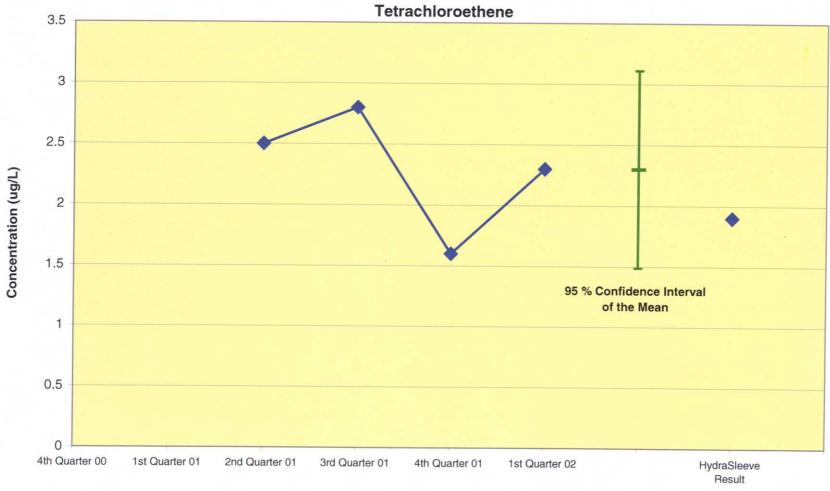


Figure 20
VOC Concentration for MW MAFB-380B
Carbon Tetrachloride

Less than Reporting I imit

1st Quarter 02

95 % Confidence Interval of the Mean

HydraSleeve Result

0.6

0.5

0.4

0.3

0.2

0.1

0 4th Quarter 00

1st Quarter 01

2nd Quarter 01

Concentration (ug/L)



4th Quarter 01

3rd Quarter 01

Figure 21
VOC Concentration for MW MAFB-380B
Chloroform

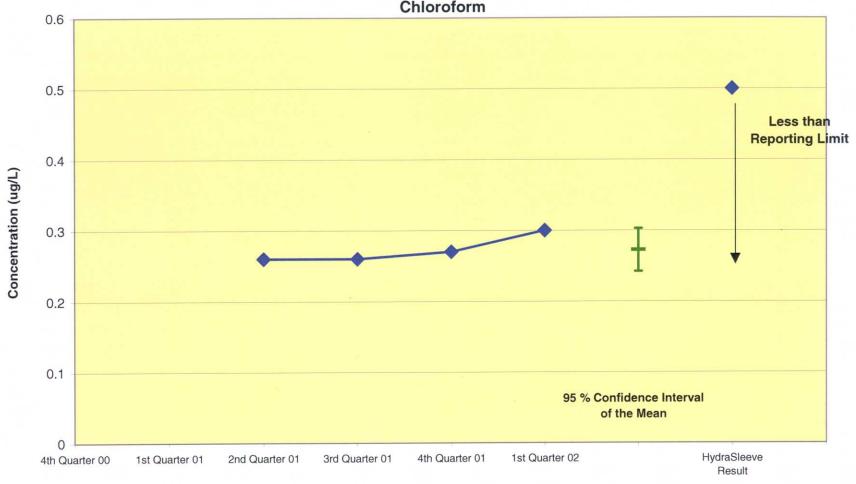


Figure 22
VOC Concentration for MW MAFB-380B
Tetrachloroethene

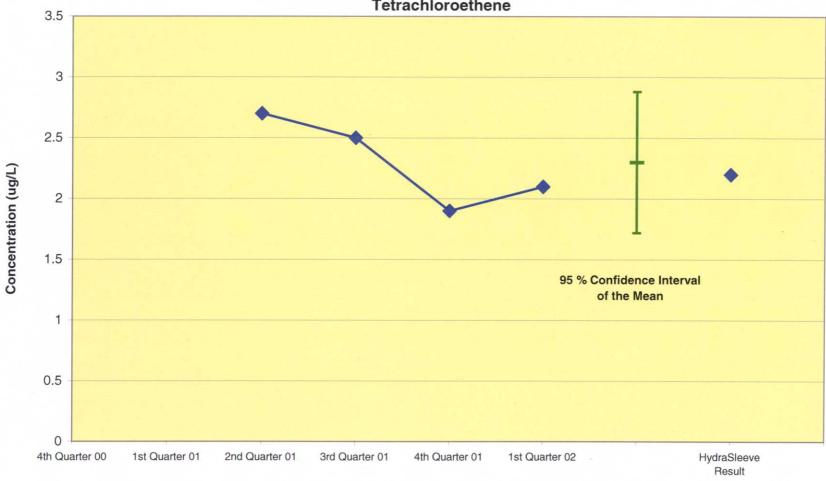


Figure 23
VOC Concentration for MW MAFB-380D
Carbon Tetrachloride

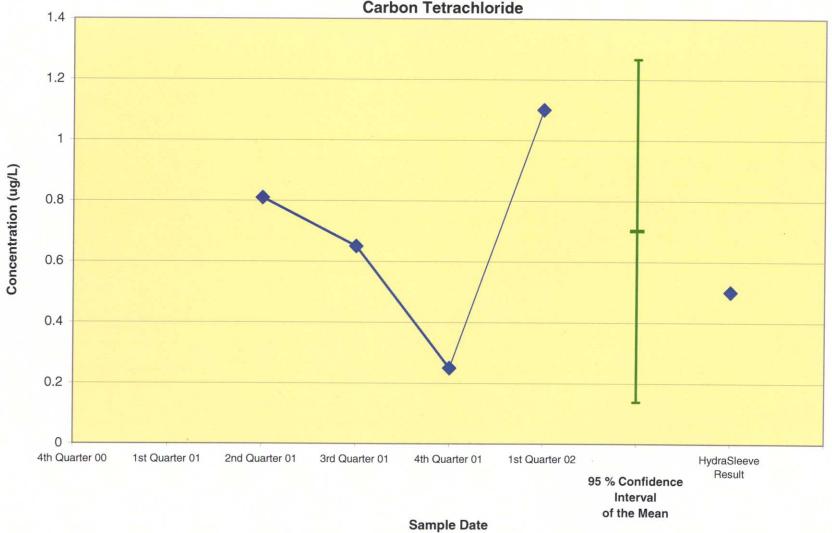


Figure 24
VOC Concentration for MW MAFB-380D
Tetrachloroethene

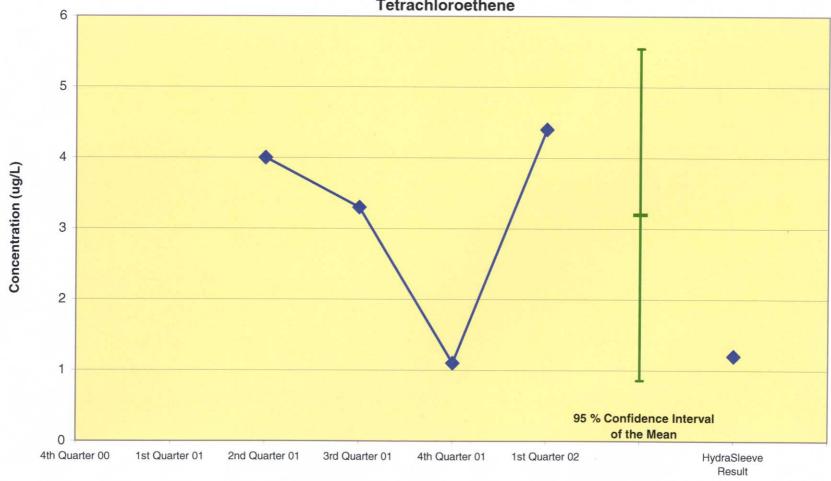


Figure 25
VOC Concentration for MW MAFB-384D
Tetrachloroethene

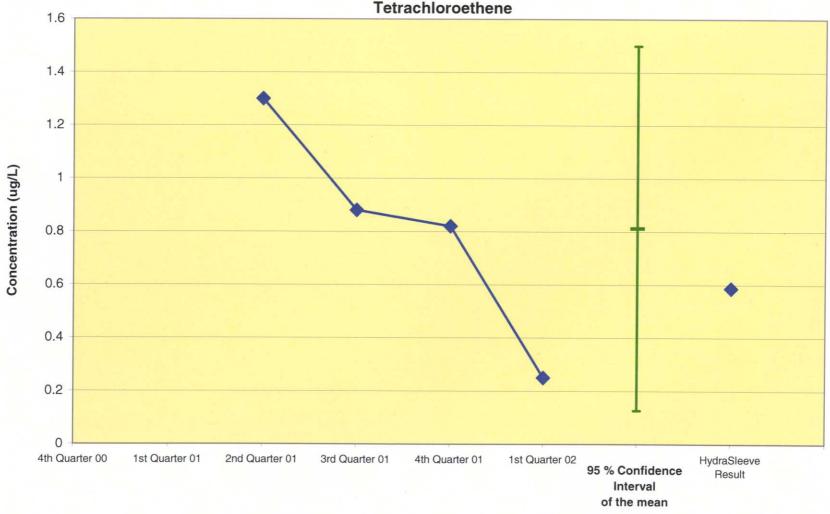


TABLE 1

POINT SOURCE BAILER DEMONSTRATION WELL CONSTRUCTION DETAILS
MATHER AIR FORCE BASE
MATHER, CALIFORNIA

Well ID	Hydrostratigraphic Unit	Site Location	Lithology USCS	Screen Interval (ft bgs)	Well Diameter (inches)	Depth to HydraSleeve <sup>TM</sup> Sampler (ft bgs)	Depth to Diffusion Sampler (ft bgs)	Historical Sampling Method
7-BV-1	Perched	SITE 7	CH/ML	59-69	4	64	64	CONVENTIONAL PURGED
MAFB-375	D	MBS	ML	170-180	4	174	174	DIFFUSION
MAFB-376	D	MBS	CL	180-190	4	184	184	DIFFUSION
MAFB-379B	В	MBS	GW/SW,SW,GM	150-160	4	154	154	DIFFUSION
MAFB-379D	р	MBS	SM,SM/ML	210-220	4	214	214	DIFFUSION
MAFB-380B	В	MBS	GW/SW,SW,GM	164.5-174.5	4	168.5	168.5	DIFFUSION
MAFB-380D	D	MBS	SP	208-218	4	212	212	DIFFUSION
MAFB-384D	D	MBS	ML	165-175	4	169	169	DIFFUSION

USCS= Unified Soil Classification System

MBS = Main Base/SAC

ft bgs = Feet below ground surface

TABLE 2

# HISTORICAL ANALYTICAL DETECTIONS POINT SOURCE BAILER DEMONSTRATION REPORT MATHER AIR FORCE BASE, MATHER, CALIFORNIA

Well 1D	Hydrostratigraphic Unit	Analyte	4th Quarter 2000 (μg/L)	1st Quarter 2000 (µg/L)	2nd Quarter 2001 (μg/L)	3rd Quarter 2001 (µg/L)	4th Quarter 2001 (µg/L)	1st Quarter 2002 (µg/L)	HydraSleeve results June 19, 2002 (µg/L)
7-BV-la	WT/P	1.2-Dichlorobenzene	1.4 F	1.5 F	1 <b>F</b>	1.4 F	1.4 F	1.6 ₽	5.2
		1.2-Dichloroethane	NP	0.4 F	< 0.5	0.83 F	< 0.5	0.42 F	<1.2
		1.2-Dichloropropane	0.87 F	1.5	0.74 P	<1	<1	0.96 F	<1.2
		1,4-Dichlorobenzene	13	3.5	2.4	Ll	ì	17	26
		Велгене	8.6	3.5	2.4	2.7	1.4	2.4	23
		Chlorobenzene	41	14	7.5	4.7	5.1	55	57
		cis-1,2-Dichloroethene	NP	1.2	0.89	1.7	1.4	0.44 F	<1.2
		Tetrachloroethene	0.26 F	0.43 F	0.3 P	0.75	0.81	< 0.5	<1.2
		Trichloroethene	0.46 F	5.1	3.3	8.2	8.6	0.9	<1.2
		Vinyt chloride	NP	4.2	1.8	3.9	2.5	2.9	<1.2
		TPH, gasoline-range	NP	NP	41000	NP	NP	NP	NP
		Ethylbenzene	<1R	<1	<ìR	</td <td>&lt;1</td> <td>&lt;1</td> <td>1.4</td>	<1	<1	1.4
		Arsenic (As) <sup>e</sup>	NP	NP	Ni	ИЪ	NP	5.8	<50
		Barium (Ba) <sup>r</sup>	NP	NP	NP	NP	N₽	67.1	84
		Copper (Cu) <sup>c</sup>	< 10	11.5	< 10	< 10	< 10	< 10	<5
		Nickel (Ni) <sup>2</sup>	NP	NP	NP	NI:	NP	<40	24
		Zinc (Zn) <sup>c</sup>	< 50	54.5	< 50	104	195	< 50	51
AFB-375	ъ	Carbon tetrachloride			().25 F <sup>b</sup>	< 0.5	< 0.5	1.4	< 0.5
		Tetrachlomethene			9.8 <sup>h</sup>	6.5	7.8	3.6	5.5
1AFB-376	D	Carhon tetrachloride	-		2.1 <sup>b</sup>	2	2.1	1.7	0.5
		Tetrachloroethene			24 <sup>b</sup>	34	36	26	40
AAFB-379B	в	Carbon tetrachtoride			\$ <sub>p</sub>	0.88	0.71	< 0.5	0.5
		Chloroform			0.27 P <sup>b</sup>	< 0.5	< 0.5	< 0.5	<0.5
		Tetrachioroethene			19 <sup>b</sup>	20	15	16	9
		Toluene			1.3 <sup>h</sup>	< 1	< 1	< i	<.5
		Total Xylenes			0.66 F <sup>b</sup>	< 1	< 1	< 1	<1
1AFB-379D	D	Carbon tetrachloride	_		0.33 F	0.56	0.31 F	< 0.5	0.5
		Tetrachloroethene	-		2.5 <sup>k</sup>	2.8	1.6	2.3	1.9
		Toluene		44	1.7 <sup>h</sup>	<1	< 1	<1	<0.5
/AFB-380B	В	Carbon tetrachtoride			0.53 <sup>h</sup>	0.45 F	0.37 F	0.3 F	0.5
		Chiomform			0.26 F <sup>b</sup>	0.26 F	0.27 F	0.3 F	0.5
		Tetrichloroethene			2.7 <sup>h</sup>	2.5	1.9	2.1	2.2
(AFB-380D	D	Carbon tetrachloride	R.A		0.81 <sup>h</sup>	0.65	< 0.5	1.1	0.5
		Tetracidoroethene	-	•	4 <sup>b</sup>	3.3	1.1	4.4	1.2
MAF8-384D	D	Chioromethane		**	0.25 F <sup>b</sup>	< 0.5	< 0.5	< 0.5	<0.5
		Tetrachloroethene			1.3"	0.88	0.82	0.6	0.586

NOTE: 7.BV-1 sampled by conventional purge method. All other wells sampled by diffusion sampling bug unters otherwise noted.

NP. Not analyzed for this parameter during this sampling event.

ND. Analyte not detected in sample

UP. Micrograms per Litter

Excala heigh the reporting limit.

Well and included.

R- Result is invalid a - Bio vent samples from the Perched Water Zone. b - Planc IV wells end-of-development sampling results or Metals samples are field filtered (-45 micron)

# SUMMARY OF DATA AND STATISTICAL ANALYSES RESULTS MATHER AIR FORCE BASE SACRAMENTO COUNTY, CALIFORNIA

#### (Page 1 of 10)

Well ID/Compound Analyzed	Quality Summary of Data	Statistical Analyses Summary
7-BV-1		
1,2-Dichlorobenzene	<ul> <li>Six historical data points were F-flagged and the estimated values were used in the analyses.</li> <li>The HydraSleeve<sup>TM</sup> data point was detected above the reporting limit.</li> <li>Normality plot and testing indicates that the data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	The HydraSleeve <sup>TM</sup> concentration was greater than the 95% confidence interval of the mean historical data. Therefore the HydraSleeve <sup>TM</sup> concentration may <b>not</b> be consistent with the historical data.
1,2-Dichloroethane	<ul> <li>Three historical data points were not detected and three data points were F-flagged.</li> <li>The HydraSleeve<sup>TM</sup> data point was not detected below the PQL.</li> <li>Due to the low number of detected values, the data was not analyzed using the T-test but was analyzed using nonparametric Wilcox-Rank test.</li> </ul>	
1,2-Dichloropropane	<ul> <li>One historical data point was detected above the PQL, three historical data points were F-flagged and two data points were not detected below the PQL.</li> <li>The HydraSleeve<sup>TM</sup> data point was not detected below the PQL.</li> <li>The estimated F-flagged values and a value of half the reporting limit was used for analysis.</li> <li>Normality plot and testing indicates that the data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	The HydraSleeve <sup>TM</sup> data concentration was below the reporting limit and the reporting limit is within the 95% confidence interval of the historical mean concentration. Therefore the HydraSleeve <sup>TM</sup> data point is consistent with the historical data.

### SUMMARY OF DATA AND STATISTICAL ANALYSES RESULTS MATHER AIR FORCE BASE SACRAMENTO COUNTY, CALIFORNIA

#### (Page 2 of 10)

Well ID/Compound Analyzed	Quality Summary of Data	Statistical Analyses Summary
1,4-Dichlorobenzene	<ul> <li>Six historical data points and the HydraSleeve<sup>TM</sup> data point values were above the reporting limit.</li> <li>The data observed on the Normal Plot does not appear to be linear. The test for normality using Wilk-Shapiro Test is less than 0.80 indicating the data is not normally distributed.</li> <li>Nonparamteric analysis using Wilcox Rank test was used to evaluate the data.</li> </ul>	The HydraSleeve <sup>TM</sup> concentration was greater than the 95% confidence interval of the median historical data based on the nonparametric Wilcox Rank confidence interval. Therefore the HydraSleeve <sup>TM</sup> concentration may <b>not</b> be consistent with the historical data.
Benzene	<ul> <li>Six historical data points and the HydraSleeve<sup>TM</sup> data point were above the reporting limit.</li> <li>The data observed on the Normal Plot does not appear to be linear. The test for normality using Wilk-Shapiro Test is greater than 0.80 at a value of 0.85 indicating the assumption of normality is valid.</li> <li>The data was analyzed both by the T-test and nonparamteric analysis using Wilcox Rank test.</li> </ul>	The HydraSleeve <sup>TM</sup> concentration was greater than the 95% confidence interval of the mean historical data based on the T-statistic and greater then the median confidence interval of the historical data based on the Wilcox Rank Test. Therefore the HydraSleeve <sup>TM</sup> concentration may <b>not</b> be consistent with the historical data.
Chlorobenzene	<ul> <li>Six historical data points and the HydraSleeve<sup>TM</sup> data point were above the reporting limit.</li> <li>The data observed on the Normal Plot does not appear to be linear at the low concentration end. The test for normality using Wilk-Shapiro Test is greater than 0.80 at a value of 0.91 indicating the assumption of normality is valid.</li> <li>The data was analyzed both by the T-test and nonparamteric analysis using Wilcox Rank test.</li> </ul>	The HydraSleeve <sup>TM</sup> concentration was greater than the 95% confidence interval of the mean historical data and greater than the median confidence interval based on the Wilcox Rank test. Although the last 4 <sup>th</sup> quarter 2002 sample result (concentration of 55 ug/L) was significantly higher than the previous historical data. The HydraSleeve <sup>TM</sup> concentration was very close at a concentration of 57 ug/L. Therefore additional data is required to make any inferences.

# SUMMARY OF DATA AND STATISTICAL ANALYSES RESULTS MATHER AIR FORCE BASE SACRAMENTO COUNTY, CALIFORNIA

#### (Page 3 of 10)

Well ID/Compound Analyzed	Quality Summary of Data	Statistical Analyses Summary
cis-1,2-Dichloroethene	<ul> <li>Four historical data points were above the reporting limit, one historical data point was F-flagged, and one historical data point was not detected below the PQL.</li> <li>The HydraSleeve<sup>TM</sup> data value was not detected below the PQL.</li> <li>Normality plot of the historical data and testing indicates that the data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	The HydraSleeve <sup>TM</sup> data concentration was below the reporting limit and the reporting limit is within the 95% confidence interval of the historical mean concentration. Therefore the HydraSleeve <sup>TM</sup> data point is consistent with the historical data.
Tetrachloroethene	<ul> <li>Five historical data points were detected above the PQL and one data point was not detected below the PQL.</li> <li>The HydraSleeve<sup>TM</sup> data value was not detected below the PQL.</li> <li>Normality plot of the historical data and testing indicates that the data is normally distributed and T-test is appropriate to analyze the data. There is one data point that falls below the normal line but since this data point is estimated to be half the reporting limit the T-test was used to analyze the data.</li> </ul>	The HydraSleeve <sup>TM</sup> data concentration was below the reporting limit and the reporting limit is within the 95% confidence interval of the historical mean concentration. Therefore the HydraSleeve <sup>TM</sup> data point is consistent with the historical data.
Trichloroethene	<ul> <li>Six historical data points were detected above the PQL.</li> <li>The HydraSleeve<sup>TM</sup> data value was not detected below the PQL.</li> <li>Normality plot of the historical data and testing indicates that the data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	The HydraSleeve <sup>TM</sup> data concentration was below the reporting limit and the reporting limit is within the 95% confidence interval of the historical mean concentration. Therefore the HydraSleeve <sup>TM</sup> data point is consistent with the historical data.

### SUMMARY OF DATA AND STATISTICAL ANALYSES RESULTS MATHER AIR FORCE BASE SACRAMENTO COUNTY, CALIFORNIA

#### (Page 4 of 10)

Well ID/Compound Analyzed	Quality Summary of Data	Statistical Analyses Summary
Vinyl chloride	<ul> <li>Five historical data points were detected above the PQL and one data point was not detected below the PQL.</li> <li>The HydraSleeve<sup>TM</sup> data value was not detected below the PQL.</li> <li>Normality plot of the historical data and testing indicates that the data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	The HydraSleeve <sup>TM</sup> data concentration was below the reporting limit and the reporting limit is within the 95% confidence interval of the historical mean concentration. Although the historical data point during the 4 <sup>th</sup> quarter 2000 appears to be an outlier and much less than the other sample points. With this outlier removed the HydraSleeve <sup>TM</sup> concentration would be less than the historical mean confidence interval. Further data would be required to make any inferences on the data.
Ethylbenzene	<ul> <li>Six of the historical data points were below the reporting limit.</li> <li>The HydraSleeve<sup>TM</sup> concentration was slightly above the reporting limit.</li> <li>Due to the low number of detected values, no further analyses were conducted.</li> </ul>	<ul> <li>No analyses were conducted because the majority of the historical data concentrations were below the reporting limit.</li> <li>No inferences could be made because of the number of results below the reporting limit and the HydraSleeve<sup>TM</sup> result being close to the reporting limit.</li> </ul>
Copper	<ul> <li>Five of the historical data points were below the reporting limit and one data value was slightly above the reporting limit.</li> <li>The HydraSleeve<sup>TM</sup> concentration was below the reporting limit.</li> <li>Due to the low number of detected values, no further analyses were conducted.</li> </ul>	<ul> <li>No analyses were conducted because the majority of the historical data concentrations were below the reporting limit.</li> <li>The HydraSleeve<sup>TM</sup> concentration result was below the reporting limit as well. Therefore the HydraSleeve<sup>TM</sup> concentration is consistent with the historical data.</li> </ul>
Zinc	<ul> <li>Three of the historical data points were below the reporting limit, and three data points were above the reporting limit.</li> <li>The HydraSleeve<sup>TM</sup> concentration was above the reporting limit.</li> <li>Normality plot and testing indicates that the historical data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	The HydraSleeve <sup>TM</sup> concentration was within the 95% confidence interval of the historical mean. Therefore the HydraSleeve <sup>TM</sup> data is consistent with the historical data.

# SUMMARY OF DATA AND STATISTICAL ANALYSES RESULTS MATHER AIR FORCE BASE SACRAMENTO COUNTY, CALIFORNIA

#### (Page 5 of 10)

Well ID/Compound Analyzed	Quality Summary of Data	Statistical Analyses Summary
MAFB-375		
Carbon tetrachloride	<ul> <li>One of the historical data points were above the reporting limit, one value was F-flagged, and two values were below the reporting limit.</li> <li>The HydraSleeve<sup>TM</sup> value was below the reporting limit.</li> <li>Due to low number of detected values no further analyses were performed.</li> </ul>	<ul> <li>No analyses were conducted because the majority of the historical data concentrations were below the reporting limit.</li> <li>The HydraSleeve<sup>TM</sup> concentration result was below the reporting limit as well. Therefore the HydraSleeve<sup>TM</sup> concentration is consistent with the historical data.</li> </ul>
Tetrachloroethene	<ul> <li>Four of the historical data points and the HydraSleeve<sup>TM</sup> data point were above the reporting limit.</li> <li>Normality plot and testing indicates that the data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	<ul> <li>The plot of the historical data indicates a potential trend with time but further data would be required to evaluate.</li> <li>The HydraSleeve<sup>TM</sup> data concentration is within the 95% confidence interval of the historical mean concentration. Therefore the HydraSleeve<sup>TM</sup> data point is consistent with the historical data.</li> </ul>
MAFB-376		
Carbon Tetrachloride	<ul> <li>The four historical data points were above the reporting limit and the HydraSleeve<sup>TM</sup> data point was below the reporting limit.</li> <li>Normality plot and testing indicates that the historical data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	<ul> <li>The plot of the historical data indicates a potential trend with time but further data would be required to evaluate.</li> <li>The HydraSleeve<sup>TM</sup> data concentration was below the reporting limit and the reporting limit is within the 95% confidence interval of the historical mean concentration. Therefore the HydraSleeve<sup>TM</sup> data point may <b>not</b> be consistent with the historical data.</li> </ul>
Tetrachloroethene	<ul> <li>Four of the historical data points and the HydraSleeve<sup>TM</sup> data point were above the reporting limit.</li> <li>Normality plot and testing indicates that the data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	The HydraSleeve <sup>TM</sup> concentration was slightly greater than the 95% confidence interval of the mean historical data. Therefore the HydraSleeve <sup>TM</sup> concentration may <b>not</b> be consistent with the historical data.

# SUMMARY OF DATA AND STATISTICAL ANALYSES RESULTS MATHER AIR FORCE BASE SACRAMENTO COUNTY, CALIFORNIA

#### (Page 6 of 10)

Well ID/Compound Analyzed  Quality Summary of Data		Statistical Analyses Summary
MAFB-379B		
Carbon Tetrachloride	<ul> <li>The four historical data points were above the reporting limit and the HydraSleeve<sup>TM</sup> data point was below the reporting limit.</li> <li>Normality plot and testing indicates that the historical data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	<ul> <li>The plot of the historical data indicates a potential trend with time but further data would be required to evaluate.</li> <li>The HydraSleeve<sup>TM</sup> data concentration was below the reporting limit and the reporting limit is within the 95% confidence interval of the historical mean concentration. Therefore the HydraSleeve<sup>TM</sup> data point is consistent with the historical data.</li> </ul>
Chloroform	<ul> <li>Three of the historical data points were below the reporting limit and one value was F-flagged.</li> <li>The HydraSleeve<sup>TM</sup> value was below the reporting limit</li> <li>Due to the low number of detected values, no further analyses were conducted.</li> </ul>	<ul> <li>No analyses were conducted because the majority of the historical data concentrations were below the reporting limit.</li> <li>The HydraSleeve<sup>TM</sup> concentration result was below the reporting limit as well. Therefore the HydraSleeve<sup>TM</sup> concentration is consistent with the historical data.</li> </ul>
Tetrachloroethene	<ul> <li>Four of the historical data points and the HydraSleeve<sup>TM</sup> data point were above the reporting limit.</li> <li>Normality plot and testing indicates that the data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	The HydraSleeve <sup>TM</sup> concentration was less than the 95% confidence interval of the mean historical data. Therefore the HydraSleeve <sup>TM</sup> concentration may <b>not</b> be consistent with the historical data.

# SUMMARY OF DATA AND STATISTICAL ANALYSES RESULTS MATHER AIR FORCE BASE SACRAMENTO COUNTY, CALIFORNIA

#### (Page 7 of 10)

Well ID/Compound Analyzed	Quality Summary of Data	Statistical Analyses Summary
Toluene	<ul> <li>Three of the historical data points were below the reporting limit and one value was F-flagged.</li> <li>The HydraSleeve<sup>TM</sup> value was below the reporting limit</li> <li>Due to the low number of detected values, no further analyses were conducted.</li> </ul>	<ul> <li>No analyses were conducted because the majority of the historical data concentrations were below the reporting limit.</li> <li>The HydraSleeve<sup>TM</sup> concentration result was below the reporting limit as well. Therefore the HydraSleeve<sup>TM</sup> concentration is consistent with the historical data.</li> </ul>
Total Xylenes	<ul> <li>Three of the historical data points were below the reporting limit and one value was F-flagged.</li> <li>The HydraSleeve<sup>TM</sup> value was below the reporting limit</li> <li>Due to the low number of detected values, no further analyses were conducted.</li> </ul>	<ul> <li>No analyses were conducted because the majority of the historical data concentrations were below the reporting limit.</li> <li>The concentration is consistent with the historical data.</li> </ul>
MAFB-379D		
Carbon Tetrachloride	<ul> <li>Two of the historical data points were detected below the reporting limit but were F-flagged, one data point was detected above the reporting limit and, one data pint was not detected at the PQL. The estimated F-flagged values were used in the analyses.</li> <li>The HydraSleeve<sup>TM</sup> value was not detected at the PQL.</li> <li>Normality plot and testing indicates that the historical data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	The HydraSleeve <sup>TM</sup> data concentration was below the reporting limit and the reporting limit is within the 95% confidence interval of the historical mean concentration. Therefore the HydraSleeve <sup>TM</sup> data point is consistent with the historical data.

# SUMMARY OF DATA AND STATISTICAL ANALYSES RESULTS MATHER AIR FORCE BASE SACRAMENTO COUNTY, CALIFORNIA

#### (Page 8 of 10)

Well ID/Compound Analyzed	Quality Summary of Data	Statistical Analyses Summary
Tetrachloroethene	<ul> <li>Four of the historical data points and the HydraSleeve<sup>TM</sup> data point were above the reporting limit.</li> <li>Normality plot and testing indicates that the data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	The HydraSleeve <sup>TM</sup> concentration was within the 95% confidence interval of the historical mean. Therefore the HydraSleeve <sup>TM</sup> data is consistent with the historical data.
Toluene	<ul> <li>Three of the historical data points were below the reporting limit and one value was F-flagged</li> <li>The HydraSleeve<sup>TM</sup> value was below the reporting limit</li> <li>Due to the low number of detected values, no further analyses were conducted</li> </ul>	<ul> <li>No analyses were conducted because the majority of the historical data concentrations were below the reporting limit.</li> <li>The HydraSleeve<sup>TM</sup> concentration result was below the reporting limit as well. Therefore the HydraSleeve<sup>TM</sup> concentration is consistent with the historical data.</li> </ul>
MAFB-380B		
Carbon Tetrachloride	<ul> <li>The four historical data points were above the reporting limit and the HydraSleeve<sup>TM</sup> data point was below the reporting limit.</li> <li>Normality plot and testing indicates that the historical data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	<ul> <li>The HydraSleeve<sup>TM</sup> concentration was below the reporting limit which is consistent with the historical data.</li> <li>The 95% confidence interval of the historical mean concentration was calculated and the HydraSleeve<sup>TM</sup> concentration could be within this confidence interval but not detectable by the analytical laboratory.</li> </ul>

# SUMMARY OF DATA AND STATISTICAL ANALYSES RESULTS MATHER AIR FORCE BASE SACRAMENTO COUNTY, CALIFORNIA

#### (Page 9 of 10)

Well ID/Compound Analyzed	Quality Summary of Data	Statistical Analyses Summary
Chloroform	<ul> <li>The four historical data points were below the reporting limit but were F-Flagged. The estimated concentration was used for evaluation purposes.</li> <li>The HydraSleeve<sup>™</sup> data point was below the reporting limit.</li> <li>Normality plot and testing indicates that the historical data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	<ul> <li>The HydraSleeve<sup>TM</sup> concentration was below the reporting limit which is consistent with the historical data.</li> <li>The 95% confidence interval of the historical mean concentration was calculated and the HydraSleeve<sup>TM</sup> concentration could be within this confidence interval but not detectable by the analytical laboratory.</li> </ul>
Tetrachloroethene	<ul> <li>Four of the historical data points and the HydraSleeve<sup>TM</sup> data point were above the reporting limit.</li> <li>Normality plot and testing indicates that the data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	The HydraSleeve <sup>TM</sup> concentration was within the 95% confidence interval of the historical mean. Therefore the HydraSleeve <sup>TM</sup> data is consistent with the historical data.
MAFB-380D		
Carbon Tetrachloride	<ul> <li>The four historical data points were above the reporting limit and the HydraSleeve<sup>TM</sup> data point was below the reporting limit.</li> <li>Normality plot and testing indicates that the historical data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	The HydraSleeve <sup>TM</sup> concentration was within the 95% confidence interval of the historical mean. Therefore the HydraSleeve <sup>TM</sup> data is consistent with the historical data.

# SUMMARY OF DATA AND STATISTICAL ANALYSES RESULTS MATHER AIR FORCE BASE SACRAMENTO COUNTY, CALIFORNIA

#### (Page 10 of 10)

Well ID/Compound Analyzed	Quality Summary of Data	Statistical Analyses Summary
Tetrachloroethene	<ul> <li>Four of the historical data points and the HydraSleeve<sup>TM</sup> data point were above the reporting limit.</li> <li>Normality plot and testing indicates that the data is normally distributed and T-test is appropriate to analyze the data.</li> </ul>	The HydraSleeve <sup>TM</sup> concentration was within the 95% confidence interval of the historical mean. Therefore the HydraSleeve <sup>TM</sup> data is consistent with the historical data.
MAFB-384D		
Chloromethane	<ul> <li>Three of the historical data points were below the reporting limit and one value was F-flagged</li> <li>The HydraSleeve<sup>TM</sup> value was below the reporting limit</li> <li>Due to the low number of detected values, no further analyses were conducted</li> </ul>	<ul> <li>No analyses were conducted because the majority of the historical data concentrations were below the reporting limit.</li> <li>The HydraSleeve<sup>TM</sup> concentration result was below the reporting limit as well. Therefore the HydraSleeve<sup>TM</sup> concentration is consistent with the historical data.</li> </ul>
Tetrachloroethene	<ul> <li>Three of the historical data points were above the reporting limit and one value was below the reporting limit.</li> <li>The HydraSleeve<sup>TM</sup> value was above the reporting limit.</li> <li>Normality plot and testing indicates that the data is normally distributed and T-test is appropriate to analyze the data</li> </ul>	<ul> <li>The plot of the historical data indicates a potential trend with time but further data would be required to evaluate.</li> <li>The HydraSleeve<sup>TM</sup> data concentration is within the 95% confidence interval of the historical mean concentration. Therefore the HydraSleeve<sup>TM</sup> data point is consistent with the historical data.</li> </ul>

TABLE 4 STATISTICAL SUMMARY OF THE DATA MATHER AIR FORCE BASE SACRAMENTO COUNTY, CALIFORNIA

Well Loc ID	Analyte	Minimum Concentration	Maximum Concentration	Sample Size (Note 2)	Standard Deviation	Average Concentration	Lower Confidence Value	Upper Confidence Value	Point Source Sample Concentration
7-BV-1ª	1,2-Dichlorobenzene	1.00	1.6	6	0.204	1.38	1.169	1.598	5.2
	1,2-Dichloroethane	0.40	0.81	3	0.237	0.54	0.166	0.621	<1.2
	1,2-Dichloropropane	0.74	1.5	4	0.332	1.03	0.458	1.245	<1.2
	1,4-Dichlorobenzene	1.00	17	6	6.893	6.33	-0.900	13.567	26
	Benzene	1.40	8.6	6	2.588	3.50	0.784	6.216	23
	Chlorobenzene	4.70	55	6	20.344	20.05	-1.299	41.399	57
	cis-1,2-Dichloroethene	0.40	1.7	5	0.498	1.12	0.376	1.571	<1.2
	Tetrachloroethene	0.26	0.81	5	0.255	0.51	0.202	0.731	<1.2
	Trichloroethene	0.46	8.6	6	3.509	4.43	0.745	8.109	<1.2
	Vinvl chloride	1.80	4.2	5	0.991	3.06	1.070	4.113	<1.2
	TPH, gasoline-range	NA	NA	1	NA	41000 (Note 1)	NA	NA	NA
	Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	1.4
	Copper	<10	11.5	1	NA	NA	NA	NA	<5
	Zinc	<50	195	6	67.9	71.4	0.110	142.723	51
MAFB-375	Carbon tetrachloride	0.25	1.4	2	0.813	0.25	-0.665	1.165	<0.5
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Tetrachloroethene	3.60	9.8	4	2.599	8.03	2.789	11.061	5.5
MAFB-376	Carbon tetrachloride	1.70	2.1	4	0.189	2.07	1.674	2.276	<0.5
	Tetrachloroethene	24.00	36	4	5.888	31.33	20.631	39.369	40
MAFB-379B	Carbon tetrachloride	<0.5	1.00	3	0.146	0.86	0.187	1.233	<0.5
	Chloroform	0.27	< 0.5	1	NA	0.27 (Note 1)	NA	NA	< 0.5
	Tetrachloroethene	15.00	20	4	2.380	18.00	13.712	21.288	9
	Toluene	<1	1.3	1	NA	1.3 (Note 1)	NA	NA	< 0.5
	Total Xylenes	0.66	<1	1	NA	0.66 (Note 1)	NA	NA	<1
MAFB-379D	Carbon tetrachloride	0.31	0.56	3	0.139	0.40	0.146	0.579	<0.5
(11,11.13.37.313	Tetrachloroethene	1.60	2.8	4	0.510	2.30	1.489	3.111	1.9
	Toluene	<1	1.7						<0.5
MAFB-380B	Carbon tetrachloride	0.30	0.53	4	0.099	0.45	0.254	0.571	<0.5
MM 15-50035	Chloroform	0.26	0.3	4	0.019	0.26	0.242	0.303	< 0.5
	Tetrachloroethene	1.90	2.7	4	0.365	2.37	1.719	2.881	2.2
MAFB-380D	Carbon tetrachloride	<0.5	1.10	3	0.228	0.73	0.138	1.267	<0.5
5 5005	Tetrachloroethene	1.10	4.4	4	1.472	2.80	0.858	5.542	1.2
MAFB-384D	Chloromethane	0.25	<0.5	1	NA	0.25 (Note 1)	NA	NA	< 0.5
	Tetrachloroethene	<0.5	1.3	3	0.262	1.00	0.126	1.499	0.6

#### Notes

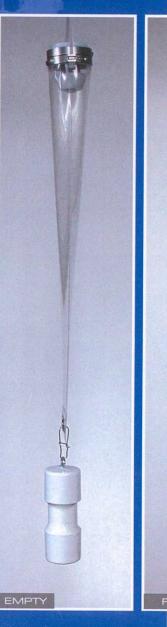
<sup>1.</sup> The average concentration is the result of the single detected value.

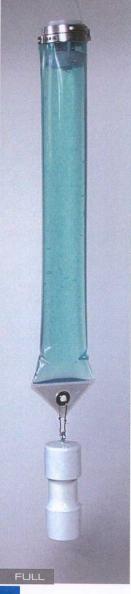
The sample number is the number of results above the detection limit or that could be quantified and used in statistical calculations.
 Samples the were flaged as estimates below the PQL were used in the statistical calculations. Samples that were less then the detection limit and not quantified were not used in the statistical calculations.

# $\begin{array}{c} \textbf{APPENDIX A} \\ \textbf{HYDRASLEEVE}^{TM} \, \textbf{SAMPLER} \end{array}$

# **HYDRAS**leeve

NO PURGE GROUNDWATER





Cut sampling costs in half with the new HydraSleeve "No Purge" groundwater sampler. HydraSleeve recovers a discreet sample from one or more intervals with ALL compounds intact-at a fraction of the cost of traditional methods. Fast, inexpensive and easy to use, the HydraSleeve only samples formation water moving through the screened interval of the well. The low-profile HydraSleeve is sealed except during sample collection, then re-seals itself, assuring that a representative sample of the aquifer is recovered.

#### THE HYDRASLEEVE PROVIDES THE FOLLOWING FEATURES:

#### **INEXPENSIVE**

- Reduces field sampling costs by 70%No purge water disposal

- No expensive support equipment
  Disposable sampler costs less than \$25

- •Collect a sample in less than 10 minutes •Cuts total field time in half, or more
- No decontamination

#### **EASY TO USE**

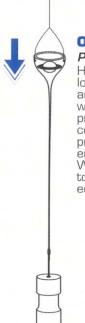
- ·Similar to bailing, but without purge water
- No training or special tools required
- Small convenient package

#### **EFFECTIVE**

- ·Sample for ALL compounds
- •Simple method improves repeatability
- Correlates with results from traditional sampling methods



#### HOW IT WORKS



#### ONE

Placing Sampler HydraSleeve is lowered into place and suspended in well screen. Water pressure keeps bag collapsed and prevents water from entering sampler. Well is allowed to return to equilibrium.



Sample Collection

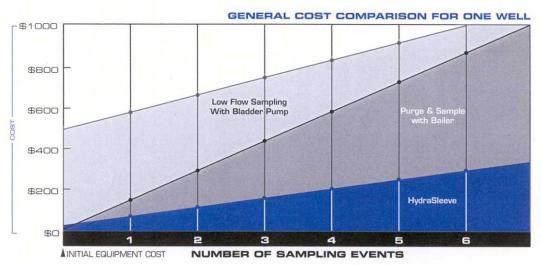
Sampler is filled by cycling up and down approximately 6". On upstroke, the check valve opens, fluid flows in to the bag, and bag expands. There is no change in water level and minimum sample agitation.

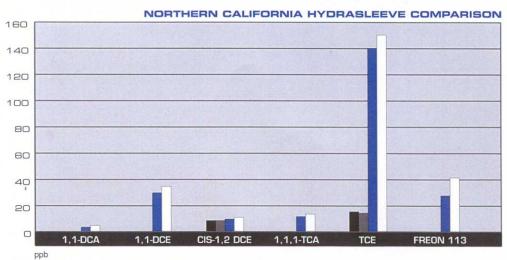


THREE

Sample Retrieval Flexible bag is full and check valve seated. Sampler can be recovered without entry of extraneous fluids.

Note: Several HydraSleeves may be stacked on the suspension cable for vertical profiling.





- □ MW-5 HydraSleeve
- MW-5 Purge/Sample
- MW-6 Purge/Sample
- MW-6 HydraSleeve

# APPENDIX B CHAIN-OF-CUSTODY RECORD AND

LABORATORY ANALYTICAL REPORTS

МWН	CHAIN OF CUSTODY RECORD	_	MWH CONTAGT PERSON
	Stetendows &	Name: Phone	PK COEY
FED EX #: Coaler 4:	A- LOGCODE: MWWC	LAB. KAJO	EN1014
SAMPLER(S) PRINTED NAME AND SIGNATURE		ANALYS	REQUIEST
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BER:	Codes Number	Sample Container	: ]] 67 [
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For Lab Use Only: Sample Condition Upon Receipt:			1111 E
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LOL CANTON NUMBER: FROM EMPLAS Handbook	Sampling Method Code (SM) From ERPIMS Handbook Sampling Matrix Code (MC) From ERPIMS Handbook	عد	Donth
Lab Code: From ERPINS Handbook	Bottle Count (BC): 1,2,3, etc.	Postovatha (94): NA - Main	
Samplo Type Code (SA): From ERPINS Hendbook	Container Type (CT): B = Brass Sleeve, A ≈ Amber Glass	•	HCj.
OBIGNIAL Condusts comes, from the condustrict of th	G = Clear Glass, P = Plastic	O = NaOH	•
Cincinnate, Come while sample (sign offly hi blue of Diack IRK)	COPIE	COPIES: Relatined by Sampler, Sent to Office	Ne 2511
			1



3 July, 2002

Walt Freeman/Lynn Mireles Dolver Company Inc. 5117 Shelter Rd. McClellan, CA 95652

RE: N/A

Sequoia Work Order: S206272

Enclosed are the results of analyses for samples received by the laboratory on 06/19/02 11:24. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Ron Chew

Client Services Representative

CA ELAP Certificate #1624



819 Striker Ave Ste 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100 www.sequoialabs.com

Dolver Company Inc. 5117 Shelter Rd. McClellan CA, 95652 Project: N/A
Project Number: 49AB01

Project Manager: Walt Freeman/Lynn Mireles

**Reported:** 07/03/02 14:32

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
7-BV-1-HSDemo	S206272-01	Water	06/18/02 13:42	06/19/02 11:24
7-BV-1-HSDemo (not filtered)	S206272-02	Water	06/18/02 13:42	06/19/02 11:24
MAFB379B-HSDemo	S206272-03	Water	06/18/02 15:10	06/19/02 11:24
MAFB384D-MS/MSD	S206272-04	Water	06/18/02 14:09	06/19/02 11:24
MAFB380B-HSDemo	S206272-05	Water	06/18/02 15:30	06/19/02 11:24
MAFB376-HSDemo	S206272-06	Water	06/18/02 14:40	06/19/02 11:24
MAFB375-HSDemo	S206272-07	Water	06/18/02 14:30	06/19/02 11:24
MAFB380D-HSDemo	S206272-08	Water	06/18/02 15:22	06/19/02 11:24
7-BV-HSDemo	S206272-09	Water	06/18/02 13:20	06/19/02 11:24
MAFB384D-HS	S206272-10	Water	06/18/02 14:09	06/19/02 11:24
MAFB379D-HSDemo	S206272-11	Water	06/18/02 14:55	06/19/02 11:24
MAFBTB1	S206272-12	Water	06/18/02 00:00	06/19/02 11:24
MAFBTB2	S206272-13	Water	06/18/02 00:00	06/19/02 11:24
WIAI DIDE				

Sequoia Analytical - Sacramento

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Project: N/A

Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles **Reported:** 07/03/02 14:32

#### Total Metals by EPA 6000/7000 Series Methods Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
7-BV-1-HSDemo (S206272-01) Water	Sampled: 06/1	8/02 13:42 F	teceived:	06/19/02 1	1:24				
Antimony	ND	0.050	mg/l	1	2060284	06/24/02	06/26/02	EPA 6010A	
Arsenic	ND	0.050	"	n	**	n		11	
Barium	0.084	0.050	"		71	и	77	п	
Beryllium	ND	0.0050	11	17		"	11	11	
Cadmium	ND	0.0050	51	11	ti .	**	ij	*1	
Chromium	ND	0.0050	TŤ	71	**	"	Ħ	**	
Cobalt	ND	0.020	**	tı	**	n	**	U	
Copper	ND	0.0050	**	"	17	u	"	и	
Lead	ND	0.050	n	R	11	**	Ð	.11	
Molybdenum	ND	0.020	ц	34		**	u	17	
Nickel	0.024	0.020	**	77	**	**	**	II .	
Selenium	ND	0.050	77	11	**	"	**	u	
Silver	ND	0.0050	11	IJ	*11	11	n	4.	
Thallium	ND	0.050	п	H	u	Ħ	III	11	
Vanadium	ND	0.020	U	ŧŧ	u	"	11	ø	
Zinc	0.051	0.0050	**	**	**	b	**	11	AF-B
7-BV-1-HSDemo (not filtered) (S20627	72-02) Water S	ampled: 06/1	8/02 13:4	42 Receiv	ed: 06/19/	02 11:24			
Antimony	ND	0.050	mg/l	1	2060311	06/25/02	06/28/02	EPA 6010A	
Arsenic	ND	0.050	"	ft	n	n	**	u	
Barium	0.13	0.050		**	11	u	11	**	
Beryllium	ND	0.0050	и	"	**	**	u	77	
Cadmium	ND	0.0050	Ħ	ii	n	Ħ	**	n	
Chromium	ND	0.0050	99	u	n	**	27	u	
Cobalt	ND	0.020	**	**	н	"	**	н	
Copper	ND	0.0050	11	**	11	U	li .	**	
Lead	ND	0.050	u	**	**	Ħ	u	19	
Molybdenum	ND	0.020	u	n	н	##	Ħ	II .	
Nickel	0.032	0.020	74	u	u	n	11	**	
Selenium	ND	0.050	**	**	**	n	II .	**	
Silver	ND	0.0050	n	**	rt .	"	n	*	
Thallium	ND	0.050	U	11	"	**	**	U	
Vanadium	ND	0.020		11	11	#	ft	"	
							**	"	



Project: N/A
Project Number: 49AB01

Project Manager: Walt Freeman/Lynn Mireles

**Reported:** 07/03/02 14:32

#### Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFB379B-HSDemo (S206272-03) Water	Sampled:	06/18/02 15:	10 Rece	ived: 06/1	9/02 11:24				
Acetone	ND	10	ug/l	1	2070001	07/01/02	07/02/02	EPA 8260B	
Benzene	ND	0.50	n	Ħ	11	H	ģ2	IT	
Bromobenzene	ND	0.50	ш	n	Ŧf	ц	**	11	
Bromochloromethane	ND	0.50	ŦT	11	n	77	11	ш	
Bromodichloromethane	ND	0.50	н	Ħ	ш	H	17	**	
Bromoform	ND	0.50	u	11	1#	u	ji	II	
Bromomethane	ND	0.50	**	n	11	u	n	U .	
2-Butanone	ND	5.0	17	**	ч	11	T\$	11	
n-Butylbenzene	ND	0.50	11	**	**		11	· ·	
sec-Butylbenzene	ND	0.50	u	n	n	11	**	tt	
Tert-butylbenzene	ND	0.50	11	11	U	11	**	ti	
Carbon disulfide	6.8	5.0	H	17	**	u	u	u	
Carbon tetrachloride	ND	0.50	U	n	n	11	**	**	
Chlorobenzene	ND	0.50	**	U	п	η	ij	U	
Chloroethane	ND	0.50	**	11	ır	"	10	***	
2-Chloroethylvinyl ether	ND	5.0		n	**	11	"	11	
Chloroform	ND	0.50	**	ш	п	"	u	11	
Chloromethane	ND	0.50	17	**	***	"	17	**	
2-Chlorotoluene	ND	0.50	n	"	11	ff	μ	II .	
4-Chlorotoluene	ND	0.50			11	n	(+	н	
Dibromochloromethane	ND	0.50	**	11	11	11	**	"	
1,2-Dibromo-3-chloropropane	ND	1.0	H	"	н	ŢŦ	ц	u	
1,2-Dibromoethane (EDB)	ND	0.50	u	υ	п	11	##	***	
Dibromomethane	ND	0.50	н	**	**	**	п	n	
1,2-Dichlorobenzene	ND	0.50	19	**	**	77	u.	11	
1,3-Dichlorobenzene	ND	0.50	11	U	н		**	**	
1,4-Dichlorobenzene	ND	0.50	п	"	ft.	18	n .	n	
Dichlorodifluoromethane	ND	0.50	**	Ħ	**	**	11	ч	
1,1-Dichloroethane	ND	0.50	**	"	"		,,	**	
1,2-Dichloroethane	ND	0.50	U	u	**	11	u	,,	
1.1-Dichloroethene	ND	0.50	11	75	n	"	11	50	
cis-1,2-Dichloroethene	ND	0.50	**	n	п	п	"	77	
	ND	0.50	"	н	"	**	u	"	
trans-1,2-Dichloroethene	ND ND	0.50	п	***	**	71	17	"	
1,2-Dichloropropane	ND ND	0.50	11	н	,,	я	n	**	
1,3-Dichloropropane	ND ND	0.50	11	u	"	**	***	п	
2,2-Dichloropropane	ND ND	0.50		"	***	"	**	**	
1,1-Dichloropropene	ND ND	0.50	(+	17		"	u	**	
cis-1,3-Dichloropropene			13	n	и	Ħ	**	п	
trans-1,3-Dichloropropene	ND	0.50	"	и	11	n	77	"	
Ethylbenzene	ND	0.50							

Sequoia Analytical - Sacramento

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Project: N/A

Project Number: 49AB01
Project Manager: Walt Freeman/Lynn Mireles

**Reported:** 07/03/02 14:32

#### Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFB379B-HSDemo (S206272-03) Water	Sampled:	06/18/02 15:	10 Rece	ived: 06/19	0/02 11:24				
Freon 113	ND	0.50	ug/l	1	2070001	07/01/02	07/02/02	EPA 8260B	
Hexachlorobutadiene	ND	0.50	0	11	'n	łT	u	п	
2-Hexanone	ND	5.0	"	11	n	n	19	ŋ	
Isopropylbenzene	ND	0.50	81	n	11	"	77	н	
p-Isopropyltoluene	ND	0.50	77	"	"	u	0	17	
Methylene chloride	ND	0.50	17	"	IJ	Ħ	"	**	
4-Methyl-2-pentanone	ND	5.0	tt	**	h	#f	u	n	
Methyl tert-butyl ether	ND	0.50	1)	**	Ħ	**	**	ıı .	
Naphthalene	ND	0.50	ш	"	11	"	**	"	
n-Propylbenzene	ND	0.50	**	11	77	"	**	п	
Styrene	ND	0.50	**	u	IJ	**	h	##	
1,1,1,2-Tetrachloroethane	ND	0.50	17	0	U	ŦT	n	11	
1,1,2,2-Tetrachloroethane	ND	0.50	11	77	11	**	**	.,	
Tetrachloroethene	9.0	0.50	U	19	77		1*	u	
Toluene	ND	0.50	Ħ	п	11	11	**	н	
1,2,3-Trichlorobenzene	ND	0.50	**	u	p	11	11	ŦŦ	
1,2,4-Trichlorobenzene	ND	0.50	11	"	"	**	**	**	
1,1,2-Trichloroethane	ND	0.50	11	77	II .	ij	17	11	
1,1,1-Trichloroethane	ND	0.50	11	**	**	"	**	u	
Trichloroethene	ND	0.50	u	п	"	11	11	"	
Trichlorofluoromethane	ND	0.50	7+	u	· ·	**	u	**	
1,2,3-Trichloropropane	ND	0.50	17	16	u	"	Ħ	#	
1,2,4-Trimethylbenzene	ND	0.50	н	11	n	н	**	н	
1,3,5-Trimethylbenzene	ND	0.50	n	17	**	11	17	n	
Vinyl acetate	ND	5.0		H	"	17	**	u	
Vinyl chloride	ND	0.50	u	n	11	"	n	и	
m,p-Xylene	ND	0.50	11	ш	11	"	Ħ	**	
o-Xylene	ND	0.50	##	**	**	u	Ħ	11	
Surrogate: 1,2-Dichloroethane-d4		109 %	63	-118	"	p	r,	"	
Surrogate: Toluene-d8		99.8 %	73	-125	"	ii	H	"	
Surrogate: 4-BFB		93.9 %		-118	,,	#	"	n	



Project: N/A

5117 Shelter Rd. McClellan CA, 95652 Project Number: 49AB01
Project Manager: Walt Freeman/Lynn Mireles

**Reported:** 07/03/02 14:32

#### Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFB384D-MS/MSD (S206272-04) Water	Sampled	: 06/18/02 14:	09 Rec	eived: 06/1	9/02 11:24	<u> </u>			
Acetone	ND	10	ug/l	1	2070001	07/01/02	07/02/02	EPA 8260B	
Benzene	ND	0.50	11	11	***	ii	11	n	
Bromobenzene	ND	0.50	11	n	н	11	n	**	
Bromochloromethane	ND	0.50	n	U	ŦŦ	++	11	77	
Bromodichloromethane	ND	0.50	"	"	"	"	17	TI .	
Bromoform	ND	0.50	11	"	n	"	11	U	
Bromomethane	ND	0.50	11	"	11	II .	11	u	
2-Butanone	ND	5.0	++	11	u	II	U	н	
n-Butylbenzene	ND	0.50	11	**	"	H	u	11	
sec-Butylbenzene	ND	0.50	¥1	**	17	Ħ	ч	τŧ	
Tert-butylbenzene	ND	0.50	75	11	17	*11	**	"	
Carbon disulfide	ND	5.0	11	IJ	n	n .	n	"	
Carbon tetrachloride	ND	0.50	"	u	u	u	n	n	
Chlorobenzene	ND	0.50	н	**	u	Ħ	n.	**	
Chloroethane	ND	0.50	п	Ħ	**	17	17	ŧŧ	
2-Chloroethylvinyl ether	ND	5.0	**	**	*1	11	ŦŦ	**	
Chloroform	ND	0.50	***	"	"	n	**	11	
Chloromethane	ND	0.50	*1	11	п	t <del>t</del>	п	н	
2-Chlorotoluene	ND	0.50	н	ш	u	Ħ	It	11	
4-Chlorotoluene	ND	0.50	"	11	+1	**	**	tş	
Dibromochloromethane	ND	0.50	11	**	11	,,	71	17	
1,2-Dibromo-3-chloropropane	ND	1.0	u	f <del>?</del>	n	н	п	**	
1,2-Dibromoethane (EDB)	ND	0.50	u	77	11	11	п	n	
Dibromomethane	ND	0.50	u	п	u	57	**	u	
1,2-Dichlorobenzene	ND	0.50	**	.,	"	**	**	u	
1,3-Dichlorobenzene	ND	0.50	**	u	***	**	11	u u	
	ND ND	0.50	11		15	"	11	1#	
1,4-Dichlorobenzene	ND	0.50	"	F#	,,	**	н	**	
Dichlorodifluoromethane	ND ND	0.50	,,	**		**	tr.	u u	
1,1-Dichloroethane	ND ND	0.50	,,	**	н	<b>₹</b> 1	11	n	
1,2-Dichloroethane	ND ND	0.50	n	U	**	n	**	и	
1,1-Dichloroethene	ND ND	0.50	u	,,	78	"	**	**	
cis-1,2-Dichloroethene	ND ND		"	"	"		,,	*	
trans-1,2-Dichloroethene		0.50			"	"		77	
1,2-Dichloropropane	ND	0.50	19	 fr	 11	"		**	
1,3-Dichloropropane	ND	0.50	77	#	" U	"	17		
2,2-Dichloropropane	ND	0.50	11	,,	"	,,	**	"	
1,1-Dichloropropene	ND	0.50	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.50			"	"	"	"	
trans-1,3-Dichloropropene	ND	0.50	"	"					
Ethylbenzene	ND	0.50	11	n	**	11	ш	π	

Sequoia Analytical - Sacramento

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Dolver Company Inc. 5117 Shelter Rd.

McClellan CA, 95652

Project: N/A

Project Number: 49AB01

Project Manager: Walt Freeman/Lynn Mireles

**Reported:** 07/03/02 14:32

#### Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFB384D-MS/MSD (S206272-04) Water	Sampled:	06/18/02 14:	09 Rec	eived: 06/1	9/02 11:24				
Freon 113	ND	0.50	ug/l	1	2070001	07/01/02	07/02/02	EPA 8260B	
Hexachlorobutadiene	ND	0.50	**	++	u	Ħ	Ħ	п	
2-Hexanone	ND	5.0	**	Ħ		क्षे	Ħ	u	
Isopropylbenzene	ND	0.50	#1	##	"	11	**	(I	
p-Isopropyltoluene	ND	0.50	"	**	**	"	"	u	
Methylene chloride	ND	0.50	†F	††	11	"	n	#	
4-Methyl-2-pentanone	ND	5.0	##	**	ŦŦ	n	n	11	
Methyl tert-butyl ether	ND	0.50	**	"	**	11	U	11	
Naphthalene	ND	0.50	"	"	n	u	11	77	
n-Propylbenzene	ND	0.50	11	11	"	**	II	n	
Styrene	ND	0.50	U	ıı .	n	17	H	n	
1,1,1,2-Tetrachloroethane	ND	0.50	n	a	Ñ	#	ŧŧ	11	
1,1,2,2-Tetrachloroethane	ND	0.50	н	"	u	71	Ħ	u	
Tetrachloroethene	0.64	0.50	u	**	**	11	**	H	
Toluene	ND	0.50	ш	Ħ	***	II .	n	11	
1,2,3-Trichlorobenzene	ND	0.50	*1	<b>f</b> f	TT .	u	n	<b>? ?</b>	
1,2,4-Trichlorobenzene	ND	0.50	**	17	n	"	n .	77	
1,1,2-Trichloroethane	ND	0.50	71	h	н	**	tt	n	
1,1,1-Trichloroethane	ND	0.50	ŦŦ	11	n	"	Ħ	u	
Trichloroethene	ND	0.50	**	U	п	"	11	ш	
Trichlorofluoromethane	ND	0.50	11	u	"	U	ff	u	
1,2,3-Trichloropropane	ND	0.50	11	и	11	п	11	Ħ	
1,2,4-Trimethylbenzene	ND	0.50	U	u	11	п	11	Ħ	
1,3,5-Trimethylbenzene	ND	0.50	"	**	17	11	n	11	
Vinyl acetate	ND	5.0	n	**	18	**	u	**	
Vinyl chloride	ND	0.50	"	#	"	97	n	†*	
m,p-Xylene	ND	0.50	н	žž.	n	**	a	D	
o-Xylene	ND	0.50	ш	Ħ	п	"	11	11	
Surrogate: 1,2-Dichloroethane-d4		112 %	63-	-118	"	#	n	"	
Surrogate: Toluene-d8		98.6 %	73-	125	"	,,	rr	<i>H</i>	
Surrogate: 4-BFB		96.1 %	68-	-118	n	,,	r	n	



Project: N/A
Project Number: 49AB01

Project Manager: Walt Freeman/Lynn Mireles

Reported: 07/03/02 14:32

#### Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFB380B-HSDemo (S206272-05) Water	Sampled:	06/18/02 15:	30 Rece	ived: 06/19	9/02 11:24				
Acetone	ND	10	ug/l	1	2070001	07/02/02	07/02/02	EPA 8260B	
Benzene	ND	0.50	n	n	п	U	11	ц	
Bromobenzene	ND	0.50	**		Ü	1t		tr.	
Bromochloromethane	ND	0.50	17	**	11	**	11	Ŧ1	
Bromodichloromethane	ND	0.50	**	***	**	1)	#1	11	
Bromoform	ND	0.50	11	11	p	IJ	**	ш	
Bromomethane	ND	0.50	n	ij	н	**	11	źŧ.	
2-Butanone	ND	5.0	a		**	77	"	TŦ	
n-Butylbenzene	ND	0.50	**	tt	77	11	<b>27</b>	U	
sec-Butylbenzene	ND	0.50	**	**	11	"	n	u	
Tert-butylbenzene	ND	0.50	n	n	и	17	U	**	
Carbon disulfide	ND	5.0	u	u	**	17	и	***	
Carbon tetrachloride	ND	0.50	ď	**	**	n	11	71	
Chlorobenzene	ND	0.50	TT	11	n	u	11	tt	
Chloroethane	ND	0.50	**	11	н	17	ij	ŦŦ	
2-Chloroethylvinyl ether	ND	5.0	п	u	u	**	11	*1	
Chloroform	ND	0.50	u	**	11	н	tī	a	
Chloromethane	ND	0.50	11	19	11	It	u	**	
2-Chlorotoluene	ND	0.50	17	n.	и	71	11	11	
4-Chlorotoluene	ND	0.50	n	11	**	h	77	п	
Dibromochloromethane	ND	0.50	ш	**	**	11	"	(r	
1,2-Dibromo-3-chloropropane	ND	1.0	**	75	*11	11	11	n	
1,2-Dibromoethane (EDB)	ND	0.50	**	11	п	**	Ħ	79	
Dibromomethane	ND	0.50	11	и	**	н	#1	II .	
1,2-Dichlorobenzene	ND	0.50	79	и	***	н	**		
,	ND	0.50	п	Ħ	p	ŧŦ	u	11	
1,3-Dichlorobenzene	ND	0.50	11	**	n n	11	**	11	
1,4-Dichlorobenzene Dichlorodifluoromethane	ND	0.50	**	"	H	n	Ħ	n .	
	ND ND	0.50	**	a	77	**	"		
1,1-Dichloroethane	ND ND	0.50	n.	**	11	11	.,	77	
1,2-Dichloroethane	ND ND	0.50	п	#7		"	н	n .	
1,1-Dichloroethene	ND ND	0.50	11	"	16		**	u	
cis-1,2-Dichloroethene	ND ND	0.50	**	**	11	"	"	u	
trans-1,2-Dichloroethene		0.50	ŦŤ	и	**	17	Ü	11	
1,2-Dichloropropane	ND ND	0.50	*1	**	U	71	u	ft.	
1,3-Dichloropropane	ND	0.50	a	"	ш	u	11	u	
2,2-Dichloropropane	ND		" "	,,	**	,,	n	**	
1,1-Dichloropropene	ND	0.50	**		**	11	IJ	\$ <del>†</del>	
cis-1,3-Dichloropropene	ND	0.50	" **	"	+1	н.		n	
trans-1,3-Dichloropropene	ND	0.50	**	"	"		**	"	
Ethylbenzene	ND	0.50	"	"				•	

Sequoia Analytical - Sacramento

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Project: N/A

5117 Shelter Rd. Project Number: 49AB01
McClellan CA, 95652 Project Manager: Walt Freeman/Lynn Mireles

Reported: 07/03/02 14:32

#### Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFB380B-HSDemo (S206272-05) Wate	r Sampled:	06/18/02 15:	30 Rece	ived: 06/19	/02 11:24				
Freon 113	ND	0.50	ug/l	1	2070001	07/02/02	07/02/02	EPA 8260B	
Hexachlorobutadiene	ND	0.50	IJ	tt	**	11	11	ŦŦ	
2-Hexanone	ND	5.0	((	11	11	"	n	**	
Isopropylbenzene	ND	0.50	11	"	11	"	н	n .	
p-Isopropyltoluene	ND	0.50	11	11	u	"	**	n .	
Methylene chloride	ND	0.50	11	PŢ	н	11	**	u	
4-Methyl-2-pentanone	ND	5.0	11	<b>5</b> \$	**	***	††	ę t	
Methyl tert-butyl ether	ND	0.50	17	Ħ	**	"	17	**	
Naphthalene	ND	0.50	a	**	n	)1	*1	**	
n-Propylbenzene	ND	0.50	0	H	11	ц	11	n	
Styrene	ND	0.50	Ħ	B	II	н	11	IJ	
1,1,1,2-Tetrachloroethane	ND	0.50	<b>#</b>	f ę	"	**	U	ш	
1,1,2,2-Tetrachloroethane	ND	0.50	***	**	н	7.0	11	110	
Tetrachloroethene	2.2	0.50	п	***	†1	**	#1	17	
Toluene	ND	0.50	U	**	"	n	11	रर	
1,2,3-Trichlorobenzene	ND	0.50	"	п	11	,11	u	1)	
1,2,4-Trichlorobenzene	ND	0.50	**	"		**	"	"	
1,1,2-Trichloroethane	ND	0.50	**	**	11	<b>†</b> ‡	**	α	
1,1,1-Trichloroethane	ND	0.50	"	17	τt	"	Ħ	Ħ	
Trichloroethene	ND	0.50	11	**	f†	п	**	<b>?</b> ₹	
Trichlorofluoromethane	ND	0.50	n	н	"	"	и	71	
1,2,3-Trichloropropane	ND	0.50	и	lr .	n	"	н	n	
1,2,4-Trimethylbenzene	ND	0.50	FI	lt.	ш	**	u	n n	
1,3,5-Trimethylbenzene	ND	0.50	**	**	Ħ	इर्र	tt.	и	
Vinyl acetate	ND	5.0	"	17	11	**	17	11	
Vinyl chloride	ND	0.50	11	**	77	"	**	**	
m,p-Xylene	ND	0.50	n	iı	ij	n	n	11	
o-Xylene	ND	0.50	u	11	"	"	n .	11	
Surrogate: 1,2-Dichloroethane-d4		108 %	63-	-118	,,	**	#	"	
Surrogate: Toluene-d8		98.7 %	73	-125	"	n	n	"	
Surrogate: 4-BFB		92.7 %	68	-118	"	'n	17	,,	



Project: N/A

5117 Shelter Rd. McClellan CA, 95652 Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles **Reported:** 07/03/02 14:32

#### Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFB376-HSDemo (S206272-06) Water	Sampled: 0	6/18/02 14:40	Receiv	ed: 06/19/0	02 11:24				
Acetone	ND	17	ug/l	1.67	2070001	07/02/02	07/02/02	EPA 8260B	
Benzene	ND	0.84	**	11	17	11*	11	19	
Bromobenzene	ND	0.84	27	n	ŦŦ	Ħ	ŦŤ	11	
Bromochloromethane	ND	0.84	**	11	**	<b>1</b> f	**	н	
Bromodichloromethane	ND	0.84	**	n	**	11	"	II .	
Bromoform	ND	0.84	**	II	*11	**	11	n	
Bromomethane	ND	0.84	17	ii	11	n	11	n.	
2-Butanone	ND	8.4	77	"	"	n	n	u	
n-Butylbenzene	ND	0.84	77	11	n	11	"	u	
sec-Butylbenzene	ND	0.84	11	u	II .	n n	ti.	Ħ	
Tert-butylbenzene	ND	0.84	**	It	u	u-	#	πŧ	
Carbon disulfide	80	8.4	U	n	n	++	11	**	
Carbon tetrachloride	ND	0.84	U	**	**	**	**	n	
Chlorobenzene	ND	0.84	п	17	***	**	**	n	
Chloroethane	ND	0.84	п	71	77	Ħ	n	u	
2-Chloroethylvinyl ether	ND	8.4	u	n	***	11	n n	n	
Chloroform	ND	0.84	н	n	n	11	u	n	
Chloromethane	ND	0.84	**	er e	a	u	u	11	
2-Chlorotoluene	ND	0.84	16	н	u	U	11	11	
4-Chlorotoluene	ND	0.84	**	ц	u	**	11	11	
Dibromochloromethane	ND	0.84	**	"	**	11	17	**	
1,2-Dibromo-3-chloropropane	ND	1.7	Ħ	11	**	**		n	
1,2-Dibromoethane (EDB)	ND	0.84	71	ŧŧ	**	Ŧ1	n	н	
Dibromomethane	ND	0.84	71	**	**	n	n	"	
1,2-Dichlorobenzene	ND	0.84	**	**	**	"	"	"	
1,3-Dichlorobenzene	ND	0.84	**	19	11	"	u	n	
1,4-Dichlorobenzene	ND	0.84	11	**	n	ш	u	u	
Dichlorodifluoromethane	ND	0.84	11	**	п	п	11	11	
1.1-Dichloroethane	ND	0.84	n	**	11	**	11	**	
1,2-Dichloroethane	ND	0.84	ij	"		**	77	**	
1,1-Dichloroethene	ND ND	0.84	и	11	U	17	n	fŦ	
cis-1,2-Dichloroethene	ND ND	0.84	u		11	11	"	Ħ	
trans-1,2-Dichloroethene	ND	0.84	н	,,	**	"	"	<b>7</b> †	
1,2-Dichloropropane	ND ND	0.84	u	н	**	,,	ji .	"	
1,3-Dichloropropane	ND ND	0.84	11	ц	19	,,	u	"	
2,2-Dichloropropane	ND	0.84	111	11	11		11	u	
	ND ND	0.84	(r	**	1)	"	+1		
1,1-Dichloropropene	ND ND	0.84	11	11	11	"	11	4	
cis-1,3-Dichloropropene		0.84 0.84	11	11	"	Ħ	11	u	
trans-1,3-Dichloropropene	ND ND			**	"	**	19		
Ethylbenzene	ND	0.84		"	**		"		

Sequoia Analytical - Sacramento

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



5117 Shelter Rd. McClellan CA, 95652 Project: N/A

Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles **Reported:** 07/03/02 14:32

#### Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFB376-HSDemo (S206272-06) Water	Sampled: 06	/18/02 14:40	Receiv	ed: 06/19/	)2 11:24				
Freon 113	ND	0.84	ug/l	1.67	2070001	07/02/02	07/02/02	EPA 8260B	
Hexachlorobutadiene	ND	0.84	11	"	u	+\$	Ħ	#1	
2-Hexanone	ND	8.4	**	h	9	**	**	u ·	
Isopropylbenzene	ND	0.84	T#	11	*1	17	13	77	
p-Isopropyltoluene	ND	0.84	**	"	**	11	H	††	
Methylene chloride	ND	0.84	**	н	**	n	li .	n	
4-Methyl-2-pentanone	ND	8.4	**	"	++	И	II	н	
Methyl tert-butyl ether	ND	0.84	17	II .	**	Œ	u	11	
Naphthalene	ND	0.84	**	н	"	17	u	u u	
n-Propylbenzene	ND	0.84	11	**	n	**	t)	10	
Styrene	ND	0.84	11	#	11	**	11	11	
1,1,1,2-Tetrachloroethane	ND	0.84	11	tf	Ü	1)	"	71	
1,1,2,2-Tetrachloroethane	ND	0.84	11	77	Ħ	н	n	19	
Tetrachloroethene	40	0.84	н	**	ř†	'n	n	77	
Toluene	ND	0.84	u	**	ŦŦ	tr	n	n	
1,2,3-Trichlorobenzene	ND	0.84	11	17	Ħ	11	0	n	
1,2,4-Trichlorobenzene	ND	0.84	**	n	U	"	**	"	
1,1,2-Trichloroethane	ND	0.84	<b>#1</b>	ш	п	11	<b>f</b> f	Ħ	
1,1,1-Trichloroethane	ND	0.84	**	u	u	μ	77	11	
Trichloroethene	ND	0.84	17	ш	Ħ	n	n	##	
Trichlorofluoromethane	ND	0.84	"	**	**	11	11	n	
1,2,3-Trichloropropane	ND	0.84	**	**	ŦŦ	ŧf	u	n	
1,2,4-Trimethylbenzene	ND	0.84	11	<b>FF</b>	†#	**	1f	n	
1,3,5-Trimethylbenzene	ND	0.84		**	11	"	Ħ	n	
Vinyl acetate	ND	8.4	n	11	11	**	**	u	
Vinyl chloride	ND	0.84	n	**		,,	**	u	
m,p-Xylene	ND	0.84	n	11	n	ц	11	11	
o-Xylene	ND	0.84	u	"	u	**	n	Ħ	
Surrogate: 1,2-Dichloroethane-d4		107 %	63-	118	"	п	"	n	
Surrogate: Toluene-d8		98.2 %	73-	125	n	n	n	n	
Surrogate: 4-BFB		94.1 %	68-	118	n	n	n	"	



Project: N/A
Project Number: 49AB01

Project Manager: Walt Freeman/Lynn Mireles

Reported: 07/03/02 14:32

#### Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFB375-HSDemo (S206272-07) Water	Sampled: 06	5/18/02 14:30	Receiv	/ed: 06/19/0	02 11:24				
Acetone	ND	10	ug/l	1	2070001	07/02/02	07/02/02	EPA 8260B	
Benzene	ND	0.50	п	ч	#	11	n	#1	
Bromobenzene	ND	0.50	u	**	n	n	н	Ħ	
Bromochloromethane	ND	0.50	w	77	n	н	Ħ	77	
Bromodichloromethane	ND	0.50	**	"	u	17	11	n	
Bromoform	ND	0.50	77	п	**	**	11	n	
Bromomethane	ND	0.50	**	n	#1	n	n	u	
2-Butanone	ND	5.0	**	n	11	II .	U	řt .	
n-Butylbenzene	ND	0.50	**	u	U	U	ш	11	
sec-Butylbenzene	ND	0.50	11	11	u	17	tt	11	
Tert-butylbenzene	ND	0.50	n	11	Ħ	**	11	n	
Carbon disulfide	94	5.0	н	**	11	11	"	n	
Carbon tetrachloride	ND	0.50	**	11	"		u	**	
Chlorobenzene	ND	0.50	Ħ	ш	n	11	u	TF	
Chloroethane	ND	0.50	**	п	н	11	77	n	
2-Chloroethylvinyl ether	ND	5.0	11	**	41	))	n	11	
Chloroform	ND	0.50	,,,	n	71	"	n n	"	
	ND	0.50	*1	11	11	11		ŦŦ	
Chloromethane	ND	0.50	**	u	n	#	11	11	
2-Chlorotoluene	ND ND	0.50	.,	"	ш	**	71	n	
4-Chlorotoluene		0.50	11	**	**	h	11	п	
Dibromochloromethane	ND	1.0	p	ît	TŤ	,,	ц	(i	
1,2-Dibromo-3-chloropropane	ND		п	71	"	**	#	#	
1,2-Dibromoethane (EDB)	ND	0.50	,,	"	,,	**	**	11	
Dibromomethane	ND	0.50				11	"	"	
1,2-Dichlorobenzene	ND	0.50		 u	4	и			
1,3-Dichlorobenzene	ND	0.50	şş	"	**		"		
1,4-Dichlorobenzene	ND	0.50		17	"	"	**	15	
Dichlorodifluoromethane	ND	0.50	**	"	"	"	,,	**	
1,1-Dichloroethane	ND	0.50	"	" D	" U	" n	,, D	'n	
1,2-Dichloroethane	ND	0.50				" "	"	"	
1,1-Dichloroethene	ND	0.50	п	11	н				
cis-1,2-Dichloroethene	ND	0.50	u	"	14	"	"	u	
trans-1,2-Dichloroethene	ND	0.50	11	"	11	11	**	"	
1,2-Dichloropropane	ND	0.50	11	11	17	f#	Ŧſ	**	
1,3-Dichloropropane	ND	0.50	11	ŦŸ	п	**	n	#	
2,2-Dichloropropane	ND	0.50	11	p	Щ	u	и	11	
1,1-Dichloropropene	ND	0.50	**		"	1+	11	n.	
cis-1,3-Dichloropropene	ND	0.50	11	μ	"	17	***	U	
trans-1,3-Dichloropropene	ND	0.50	n	и	**	Ħ	ŢŦ.	"	
Ethylbenzene	ND	0.50	u	41	<b>f</b> 1	PF PF	**	Ħ	

Sequoia Analytical - Sacramento



Project: N/A

5117 Shelter Rd. McClellan CA, 95652 Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles Reported: 07/03/02 14:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFB375-HSDemo (S206272-07) Water	Sampled: 06	/18/02 14:30	Receiv	ed: 06/19/	02 11:24				
Freon 113	ND	0.50	ug/l	1	2070001	07/02/02	07/02/02	EPA 8260B	
Hexachlorobutadiene	ND	0.50	**	41	п	и	71	a	
2-Hexanone	ND	5.0	11	ŦŦ	40	11	11	11	
Isopropylbenzene	ND	0.50	n	11	**	11	u	77	
p-Isopropyltoluene	ND	0.50	11	11	***	77	u	n	
Methylene chloride	ND	0.50	n	"	**	**	11	n	
4-Methyl-2-pentanone	ND	5.0	ш	ц	pt	n	ŦŦ.	n	
Methyl tert-butyl ether	ND	0.50	11	Ħ	n	u	† <del>†</del>	ш	
Naphthalene	ND	0.50	ŦŦ	ŧτ	u	II	11	"	
n-Propylbenzene	ND	0.50	**	75	**	#	u	#	
Styrene	ND	0.50	11	n	**	**	u	n	
1,1,1,2-Tetrachloroethane	ND	0.50	n	11	#1	"	11	n	
1,1,2,2-Tetrachloroethane	ND	0.50	"	u	"	11	**	n	
Tetrachloroethene	5.5	0.50	и	U	ū	11	**	111	
Toluene	ND	0.50	ff.	**	Ü	11	11	71	
1,2,3-Trichlorobenzene	ND	0.50	77	11	11	**	u	**	
1,2,4-Trichlorobenzene	ND	0.50	11	7)	**	11	u	"	
1,1,2-Trichloroethane	ND	0.50	u	n	н	"	11	u u	
1,1,1-Trichloroethane	ND	0.50	11	Ħ	U	11	11	***	
Trichloroethene	ND	0.50	11	11	III	£ŧ.	H	***	
Trichlorofluoromethane	ND	0.50	**	n	***	**	n	#f	
1,2,3-Trichloropropane	ND	0.50	<b>†</b> 7	***	***	"	я	n	
1,2,4-Trimethylbenzene	ND	0.50	77	n	17	н	tf	n	
1,3,5-Trimethylbenzene	ND	0.50	n	n	n	**	**	II.	
Vinyl acetate	ND	5.0	n	"	11	"	77	**	
Vinyl chloride	ND	0.50		11	ш	**	**	**	
m,p-Xylene	ND	0.50	u	H	**	#1	B	17	
o-Xylene	ND	0.50	11	n	Ħ	p	,1	77	
Surrogate: 1,2-Dichloroethane-d4		103 %	63	-118	"	#	n	"	
Surrogate: Toluene-d8		97.8 %	73	-125	n	#	n	н	
Surrogate: 4-BFB		93.7 %	68	-118	tt	"	"	и	



Project: N/A

Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles **Reported:** 07/03/02 14:32

# Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

WMATERIA CONTRACTOR CO				Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFB380D-HSDemo (S206272-08) Water	Sampled:	06/18/02 15:	22 Rece	ived: 06/19	9/02 11:24				
Acetone	ND	10	ug/l	1	2070001	07/02/02	07/02/02	EPA 8260B	
Benzene	ND	0.50	и	Ħ	D	"	u	11	
Bromobenzene	ND	0.50	**	"	31	ц	#	Ħ	
Bromochloromethane	ND	0.50	**	u	17	H	17	17	
Bromodichloromethane	ND	0.50	"	**	n	**	11	"	
Bromoform	ND	0.50	11	**	н	II .	11	ш	
Bromomethane	ND	0.50	•	11	· ·	ij	**	11	
2-Butanone	ND	5.0	77	"	# <b>†</b>	**	**	15	
n-Butylbenzene	ND	0.50	**	n	11	TI	11	11	
sec-Butylbenzene	ND	0.50	υ	वर	и	U	"	п	
Tert-butylbenzene	ND	0.50	u	11	Ħ	"	?†	ff	
Carbon disulfide	ND	5.0	**	U	17	**	11	11	
Carbon tetrachloride	ND	0.50	17	u	11	"	o o	11	
Chlorobenzene	ND	0.50	n	**	11	н	11	11	
Chloroethane	ND	0.50	п	"	77	Ħ	Ħ	Ħ	
2-Chloroethylvinyl ether	ND	5.0	••	11	D	**	n	11	
Chloroform	ND	0.50	**	17	ш	.,	u	п	
Chloromethane	ND	0.50	11	77	11	ţŧ	**	**	
2-Chlorotoluene	ND	0.50	ц	11	11	**	n .	"	
4-Chlorotoluene	ND	0.50	***	11	n	U	u	n .	
Dibromochloromethane	ND	0.50	**	17	"	"	**	**	
1,2-Dibromo-3-chloropropane	ND	1.0		H	**	11	"	11	
1,2-Dibromoethane (EDB)	ND	0.50	н	11	n	"	n	n	
Dibromomethane	ND	0.50	"	11	u	"	u	n	
1,2-Dichlorobenzene	ND	0.50	**	**	**	н	17	11	
1,3-Dichlorobenzene	ND	0.50	17	71	**	**	11	**	
1,4-Dichlorobenzene	ND	0.50	U	b	IJ	n	n	n	
Dichlorodifluoromethane	ND	0.50		н	и	u	н	ш	
1.1-Dichloroethane	ND	0.50	**	**	**	**	19	**	
1,2-Dichloroethane	ND	0.50	77	11	n	**	19	17	
1.1-Dichloroethene	ND	0.50	11	n	Ð	n	IJ	n	
cis-1,2-Dichloroethene	ND	0.50	п	11	11	11	11	u	
trans-1,2-Dichloroethene	ND	0.50		**	+1	**	**	**	
1,2-Dichloropropane	ND	0.50	#1	"	79	11	**	11	
1,3-Dichloropropane	ND	0.50	11	н	н	ц	U	"	
2,2-Dichloropropane	ND	0.50		11	##	11	**	н	
1,1-Dichloropropene	ND	0.50	"	"	**	11	n	***	
	ND ND	0.50	11	"	11	"	"	**	
cis-1,3-Dichloropropene	ND ND	0.50	11	IJ	0	п	u	11	
trans-1,3-Dichloropropene	ND ND	0.50	11	u	"	"	+1		
Ethylbenzene	ND	0.50							

Sequoia Analytical - Sacramento



Project: N/A

Project Number: 49AB01
Project Manager: Walt Freeman/Lynn Mireles

Reported: 07/03/02 14:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFB380D-HSDemo (S206272-08) Water	Sampled:	06/18/02 15:2	2 Rece	ived: 06/19	0/02 11:24				·
Freon 113	ND	0.50	ug/l	1	2070001	07/02/02	07/02/02	EPA 8260B	
Hexachlorobutadiene	ND	0.50	u	II	ff	n	**	Ħ	
2-Hexanone	ND	5.0	11	ŧŦ	H	IJ	**	TF .	
Isopropylbenzene	ND	0.50	**	#*	"	ij	11	"	
p-Isopropyltoluene	ND	0.50	17	**	"	"	11	"	
Methylene chloride	ND	0.50	13	n	u	11	IJ	u	
4-Methyl-2-pentanone	ND	5.0	77	11	Ħ	#1	a	u	
Methyl tert-butyl ether	ND	0.50	**	н	<b>11</b>	n	**	11	
Naphthalene	ND	0.50	**	11	**	n	11	**	
n-Propylbenzene	ND	0.50	n	ц	n	н	11	11	
Styrene	ND	0.50	μ	œ	II.	lt.	11	"	
1,1,1,2-Tetrachloroethane	ND	0.50		++	11	11	"	n	
1,1,2,2-Tetrachloroethane	ND	0.50	u	**	)1	**	u	u	
Tetrachloroethene	1.2	0.50	II.	**	11	**	11	**	
Toluene	ND	0.50	11	n	ŦŦ	p	ŧţ	Ħ	
1,2,3-Trichlorobenzene	ND	0.50	**	u	n	"	**	17	
1,2,4-Trichlorobenzene	ND	0.50	11		11	11	"	"	
1,1,2-Trichloroethane	ND	0.50	**	· ·	u	¥1	U	u	
1,1,1-Trichloroethane	ND	0.50	п	\$6	11	11	Ħ	· ·	
Trichloroethene	ND	0.50	n	**	***	n	**	tt.	
Trichlorofluoromethane	ND	0.50	10	**	77	"	**	**	
1,2,3-Trichloropropane	ND	0.50	я	n	**	11	11	78	
1,2,4-Trimethylbenzene	ND	0.50	t <del>t</del>	H	pt	#1	n	II.	
1,3,5-Trimethylbenzene	ND	0.50	11	"	11	11	u	· ·	
Vinyl acetate	ND	5.0	**	"	ш	71	u,	"	
Vinyl chloride	ND	0.50	14	ii	u	11	Ħ	Ħ	
m,p-Xylene	ND	0.50	77	te	Ħ	и	n	Ħ	
o-Xylene	ND	0.50	7)	**	71	11	11	11	
Surrogate: 1,2-Dichloroethane-d4		109 %	63-	-118	11	n	"	"	
Surrogate: Toluene-d8		99.1 %	73-	-125	"	n	#	"	
Surrogate: 4-BFB		94.4 %	68-	-118	"	"	"	"	



Project: N/A

Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles **Reported:** 07/03/02 14:32

#### Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
7-BV-HSDemo (S206272-09) Water	Sampled: 06/18/0	)2 13:20 Re	ceived: 0	6/19/02 11	:24				
Acetone	ND	25	ug/l	2.5	2070001	07/02/02	07/02/02	EPA 8260B	
Benzene	23	1.2	ü	tr.	Ħ	11	Щ	u	
Bromobenzene	ND	1.2	**	**	H	11	11	Ħ	
Bromochloromethane	ND	1.2	**	**	н	n	++	**	
Bromodichloromethane	ND	1.2	11	"	п	u	11	**	
Bromoform	ND	1.2	n	"	u	IF	n	11	
Bromomethane	ND	1.2	11	н	TT.	11	n	11	
2-Butanone	ND	12	"	11	77	**	u u	**	
n-Butylbenzene	ND	1.2	"	11	"	"	11	17	
sec-Butylbenzene	2.2	1.2	u	17	11	11	11	77	
Tert-butylbenzene	ND	1.2	**	***	н	11	n	n	
Carbon disulfide	ND	12	**	11	u	Ħ	u	u	
Carbon tetrachloride	ND	1.2	**	11	11	**	**	"	
Chlorobenzene	57	1.2	11	a	11	n	**	**	
Chloroethane	ND	1.2	10	***	н	и	н	11	
2-Chloroethylvinyl ether	ND	12	п	Ŧf	n	Ħ	ц	11	
Chloroform	ND	1.2	u	71	u	77	"	H	
Chloromethane	ND	1.2	**	0	**	"	11	19	
2-Chlorotoluene	ND	1,2	Ħ	u	75	n	n	#1	
4-Chlorotoluene	ND	1.2	**	11	**	u	11	u .	
Dibromochloromethane	ND	1.2	n	11	n	**	u	· ·	
1,2-Dibromo-3-chloropropane	ND	2.5		**	u	††	**	и	
1,2-Dibromoethane (EDB)	ND	1.2	n	11	п	"	Ħ	11	
Dibromomethane	ND	1.2	Ħ	,,	++	"	17	77	
1.2-Dichlorobenzene	5.2	1.2	**	11	**	п	11	"	
1,3-Dichlorobenzene	2.2	1.2	₹₹	ìı	#	**	ų	n	
1,4-Dichlorobenzene	26	1.2	**	**	#1	Ħ	#	ш	
Dichlorodifluoromethane	ND	1.2	17	11	11	п	77	***	
1.1-Dichloroethane	ND	1.2	11	**	a	n	17	T*	
1,2-Dichloroethane	ND	1.2	a	**	п	11	U	"	
1.1-Dichloroethene	ND	1.2		"	##	Ħ	e	n	
cis-1,2-Dichloroethene	ND	1.2	**	n	**	11	++	u	
trans-1,2-Dichloroethene	ND	1.2	**	"	"	"	11	ш	
1,2-Dichloropropane	ND	1.2	Ŧŧ	**	n	"	н	tt.	
1,3-Dichloropropane	ND	1.2	**	**		u	U	π	
2,2-Dichloropropane	ND	1.2	v	11	11	**	u	"	
1,1-Dichloropropene	ND	1.2	u	"	**	ŦŤ	11	n	
cis-1,3-Dichloropropene	ND ND	1.2	n n	"	77	**	**	u	
	ND ND	1.2			**	n	**	***	
trans-1,3-Dichloropropene		1.2	н	"	11	и	"	11	
Ethylbenzene	1.4	1.2							

Sequoia Analytical - Sacramento



Dolver Company Inc. 5117 Shelter Rd.

McClellan CA, 95652

Project: N/A

Project Number: 49AB01

Project Manager: Walt Freeman/Lynn Mireles

Reported: 07/03/02 14:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
7-BV-HSDemo (S206272-09) Water	Sampled: 06/18/0	2 13:20 Re-	ceived: 0	6/19/02 11:	24				
Freon 113	ND	1.2	ug/l	2.5	2070001	07/02/02	07/02/02	EPA 8260B	
Hexachlorobutadiene	ND	1.2	ш	11	n	11	11	"	
2-Hexanone	ND	12	11	11	ш	17	11	ff	
Isopropylbenzene	6.5	1.2	**	11	u	77	III	ff.	
p-Isopropyltoluene	ND	1.2	ff	,,	**	"	**	**	
Methylene chloride	ND	1.2	**	ш	<b>Ŧ</b> Ŧ	п	11	"	
4-Methyl-2-pentanone	ND	12	<b>\$</b> 7	11	**	u	11	11	
Methyl tert-butyl ether	ND	1.2	11	"	**	11	"	a	
Naphthalene	ND	1.2	"	**	п	***	"	**	
n-Propylbenzene	ND	1.2		Ħ	u	11	11	tt:	
Styrene	ND	1.2		"	u	11	11	11	
1,1,1,2-Tetrachloroethane	ND	1.2	**	и	11	"	78	11	
1,1,2,2-Tetrachloroethane	ND	1.2	**	"	**		11	n	
Tetrachloroethene	ND	1.2	**	tt.	**	11	ŦŤ	п	
Toluene	ND	1.2	"	**	ti .	**	n	11	
1,2,3-Trichlorobenzene	ND	1.2	11	17	н	11	н	Ħ	
1,2,4-Trichlorobenzene	ND	1.2	"	**	**	"	"	n	
1,1,2-Trichloroethane	ND	1.2	n	D	17	31	***	n	
1,1,1-Trichloroethane	ND	1.2	11	"	11	ff	Ŧ7	II .	
Trichloroethene	ND	1.2	H	II.	n	**	n	u	
Trichlorofluoromethane	ND	1.2	**	"	"	**	11	**	
1,2,3-Trichloropropane	ND	1.2	**	***	U	n	ti .	11	
1,2,4-Trimethylbenzene	ND	1.2	#	ŧT	11	Д	и	**	
1,3,5-Trimethylbenzene	ND	1.2	u	H	<b>27</b>	11	11	n .	
Vinyl acetate	ND	12	n	n n	97	47	TT .	"	
Vinyl chloride	ND	1.2	n	IJ	11	TT.	11	u	
m,p-Xylene	ND	1.2	u	и	IJ	11	'n	ш	
o-Xylene	ND	1.2		11	tt	IJ	11	11	
Surrogate: 1,2-Dichloroethane-d4		103 %	63-	-118	n	,,	"	ø	
Surrogate: Toluene-d8		99.0 %	73	-125	n	u	#	II	
Surrogate: 4-BFB		97.6 %	68	-118	"	n	#	n	



McClellan CA, 95652

Project: N/A

5117 Shelter Rd. Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles

Reported:

07/03/02 14:32

#### Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

	Danult	Reporting	Timita	Dilution	Batch	Dranara d	Amalamad	Mathad	Notes
Analyte	Result	Limit	Units	Diumon	Baten	Prepared	Analyzed	Method	Notes
MAFB384D-HS (S206272-10) Water	Sampled: 06/18/0	02 14:09 R		06/19/02 11	:24				
Acetone	ND	10	ug/l	1	2070001	07/02/02	07/02/02	EPA 8260B	
Benzene	ND	0.50	н	н	17	H.	11	##	
Bromobenzene	ND	0.50	н	#	11	и	n	n	
Bromochloromethane	ND	0.50	U	11	Д	U	Ш	fτ	
Bromodichloromethane	ND	0.50	"	11	н	u	u	**	
Bromoform	ND	0.50	"	"	U .	u	u	77	
Bromomethane	ND	0.50	"	ts.	13	11	11	17	
2-Butanone	ND	5.0	"	n n	61	t+	***	**	
n-Butylbenzene	ND	0.50	н	n	#1	**	**	"	
sec-Butylbenzene	ND	0.50		,,	ŦŦ	**	77	п	
Tert-butylbenzene	ND	0.50	u	11	Ħ	**	"	n	
Carbon disulfide	5.0	5.0	u	u	11	**	11	n .	
Carbon tetrachloride	ND	0.50	**	**	**	н	11	a	
Chlorobenzene	ND	0.50	**	#1	Ð	IJ	II .	n	
Chloroethane	ND	0.50	11	Ħ	11	ii	п	н	
2-Chloroethylvinyl ether	ND	5.0	***	77	u	n	ц	11	
Chloroform	ND	0.50	**	tr	"	**	**	**	
Chloromethane	ND	0.50	n	u	**	**	**	11	
2-Chlorotoluene	ND	0.50	u	n n	11	#	11	Ŧf	
4-Chlorotoluene	ND	0.50	п	ıı .	77	11	11	**	
Dibromochloromethane	ND	0.50	"	U	**	n	11	u .	
1,2-Dibromo-3-chloropropane	ND	1.0	n	"	n	n	IJ	n	
1,2-Dibromoethane (EDB)	ND	0.50	п	**	ņ	n	n .	п	
Dibromomethane	ND	0.50	u	18	n	u	u	II.	
1,2-Dichlorobenzene	ND	0.50	U	**	н	u	u	n .	
1,3-Dichlorobenzene	ND	0.50	a	11	u		11	п	
1.4-Dichlorobenzene	ND	0.50	11	Ħ	U	lt.	11	u	
Dichlorodifluoromethane	ND	0.50	17	"	**	77	11	11	
1.1-Dichloroethane	ND	0.50	**	,,	**	**	**	**	
1,2-Dichloroethane	ND	0.50	17	,,	17	tr	17	н	
1,1-Dichloroethene	ND	0.50	Ħ	u	11		11	Ħ	
cis-1,2-Dichloroethene	ND ND	0.50	11	u	"	"	11	TT	
trans-1,2-Dichloroethene	ND ND	0.50	11	u	**	,,	11	**	
1,2-Dichloropropane	ND	0.50	**	и	п		n	<del>7</del> †	
1,3-Dichloropropane	ND ND	0.50	11	"	ij	п	"	tf	
2,2-Dichloropropane	ND ND	0.50	п	**	н	Ħ	,,	н	
	ND	0.50	11	77	M	54	0	"	
1,1-Dichloropropene	ND ND	0.50	n	**	111	**	,,	) y	
cis-1,3-Dichloropropene	ND ND	0.50	n	75	11	Ħ		0	
trans-1,3-Dichloropropene	ND	0.50	 11	75	11	11	"	U	
Ethylbenzene	מא	0.50	.,	"	.,		"	<del></del>	

Sequoia Analytical - Sacramento



Project: N/A

Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles **Reported:** 07/03/02 14:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFB384D-HS (S206272-10) Water	Sampled: 06/18/	02 14:09 R	eceived:	06/19/02 1	1:24				
Freon 113	ND	0.50	ug/l	1	2070001	07/02/02	07/02/02	EPA 8260B	
Hexachlorobutadiene	ND	0.50	Ħ	11	17	स	11	77	
2-Hexanone	ND	5.0	11	"	"	U	Ħ	**	
Isopropylbenzene	ND	0.50	u	u	и	"	n	и	
p-Isopropyltoluene	ND	0.50	11	11	11	fr .	U	**	
Methylene chloride	ND	0.50	11	79	#1	***	(1	11	
4-Methyl-2-pentanone	ND	5.0	Ħ	Ŧf	11	н	11	**	
Methyl tert-butyl ether	ND	0.50	n	"	"	п	11	u	
Naphthalene	ND	0.50	"	n	н	II.	D	u	
n-Propylbenzene	ND	0.50		***	II .	**	"	**	
Styrene	ND	0.50	11	15	37	n	<b>?</b> 7	ff.	
1,1,1,2-Tetrachloroethane	ND	0.50	ft	**	11	н	11	н	
1,1,2,2-Tetrachloroethane	ND	0.50	77	"	u	**	11	и	
Tetrachloroethene	0.60	0.50	u	U	Ħ	77	11	11	
Toluene	ND	0.50		u	**	н	Ħ	77	
1,2,3-Trichlorobenzene	ND	0.50	**	***	"	u	"	H	
1,2,4-Trichlorobenzene	ND	0.50	**	'n	н	16	u	п	
1,1,2-Trichloroethane	ND	0.50	u	п	\$\$	n	**	11	
1,1,1-Trichloroethane	ND	0.50	ų	u	**	ц	**	f¥	
Trichloroethene	ND	0.50	u	***	"	**	II.	п	
Trichlorofluoromethane	ND	0.50	**	**	u	**	"	u	
1,2,3-Trichloropropane	ND	0.50	**	U	ŧτ	и	**	Ħ	
1,2,4-Trimethylbenzene	ND	0.50	11	ц	**	t <del>t</del>	11	ŧŧ	
1,3,5-Trimethylbenzene	ND	0.50	11	**	"	11	10	н	
Vinyl acetate	ND	5.0	н	"	n	"	11	"	
Vinyl chloride	ND	0.50	u	11	**	п	**	u	
m,p-Xylene	ND	0.50	11	n	11	11	**	11	
o-Xylene	ND	0.50	17	н	u	11	11	Ħ	
Surrogate: 1,2-Dichloroethane-d4		106 %	63	-118	,,	"	n	"	
Surrogate: Toluene-d8		98.7 %		-125	n	,,	ρ	"	
Surrogate: 4-BFB		93.7 %		-118	"	"	u	н	



Project: N/A

Project Number: 49AB01
Project Manager: Walt Freeman/Lynn Mireles

Reported: 07/03/02 14:32

# Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFB379D-HSDemo (S206272-11) Water	Sampled:	06/18/02 14:5	55 Rece	ived: 06/19	0/02 11:24				
Acetone	ND	10	ug/l	1	2070001	07/02/02	07/02/02	EPA 8260B	
Benzene	ND	0.50	"	ti	11	11	u	ìī	
Bromobenzene	ND	0.50	**		u	ų	tt	"	
Bromochloromethane	ND	0.50	**	"	**	ш	**	u	
Bromodichloromethane	ND	0.50	**	"	**	"	"	11	
Bromoform	ND	0.50	17	***	**	**	"	11	
Bromomethane	ND	0.50	77	tr	17	TT.	11	3 <b>†</b>	
2-Butanone	ND	5.0	**	**	n	***	)1	11	
n-Butylbenzene	ND	0.50	**	11	"	**	н	II .	
sec-Butylbenzene	ND	0.50	n	<b>17</b>	IJ	н	**	и	
Tert-butylbenzene	ND	0.50	11	**	h	u	H	U	
Carbon disulfide	21	5.0	н	†1	u	н	fī	FF	
Carbon tetrachloride	ND	0.50	n	н	**	**	**	77	
Chlorobenzene	ND	0.50	**	II	**	**	11	**	
Chloroethane	ND	0.50	ff	16	#	11	n n	n	
2-Chloroethylvinyl ether	ND	5.0	17	it	11	11	ij	n	
Chloroform	ND	0.50	17	**	"	D	n	п	
Chloromethane	ND	0.50	п	71	11	tf	**	ŧŧ	
2-Chlorotoluene	ND	0.50	n	71	16	Ħ	**	tt	
4-Chlorotoluene	ND	0.50	n	1)	11	77	n	17	
Dibromochloromethane	ND	0.50	n	н	**	**	n	ŧŧ	
1,2-Dibromo-3-chloropropane	ND	1.0	u	11-	**	11	u	11	
1,2-Dibromoethane (EDB)	ND	0.50	11	I#	*1	11	n	n	
Dibromomethane	ND	0.50	**	n	11	•	**	п	
1,2-Dichlorobenzene	ND	0.50	27	17	11	11	**	п	
1,3-Dichlorobenzene	ND	0.50	**	**	h	11	11	u	
1,4-Dichlorobenzene	ND	0.50	11	71	B	**	11	HS	
Dichlorodifluoromethane	ND	0.50	11	**	u.	н	п	F7	
1,1-Dichloroethane	ND	0.50		n	16	D.	u	•	
1,2-Dichloroethane	ND	0.50	n		17		u,	71	
1,1-Dichloroethene	ND	0.50	ш	u	11	u	**	п	
cis-1,2-Dichloroethene	ND	0.50	ш	н	n	ŧŧ	ft	U	
trans-1,2-Dichloroethene	ND	0.50	n	tr.	11	77	***	n	
1,2-Dichloropropane	ND	0.50	**	**	11	11	11	œ	
1,3-Dichloropropane	ND	0.50	<b>F</b> P	#	ш	11	n	tt .	
2,2-Dichloropropane	ND	0.50	**	**	11	u	ii	15	
1,1-Dichloropropene	ND	0.50	**	"	**	"	ш	**	
	ND	0.50	**	"	++	,,	n	77	
cis-1,3-Dichloropropene	ND ND	0.50	11	***	**	Ħ	11	77	
trans-1,3-Dichloropropene	ND ND	0.50		11	**	11	ŦŦ	n	
Ethylbenzene	ND	0.50	•						

Sequoia Analytical - Sacramento



Project: N/A

5117 Shelter Rd. McClellan CA, 95652 Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles Reported: 07/03/02 14:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFB379D-HSDemo (S206272-11) Water	Sampled:	06/18/02 14:55	Rece	ived: 06/19	0/02 11:24				
Freon 113	ND	0.50	ug/l	1	2070001	07/02/02	07/02/02	EPA 8260B	
Hexachlorobutadiene	ND	0.50	**	u	17	**	11	н	
2-Hexanone	ND	5.0	**	ч	ŧτ	11	11	п	
Isopropylbenzene	ND	0.50	"	t\$	17	##	75	n	
p-Isopropyltoluene	ND	0.50	"	Ŧf	"	n	11	ш	
Methylene chloride	ND	0.50	n	**	"	17	**	"	
4-Methyl-2-pentanone	ND	5.0	11	<b>F</b> †	"	Ħ	11	II	
Methyl tert-butyl ether	ND	0.50	u	'n	"	11	U	Ħ	
Naphthalene	ND	0.50	u	17	u	"	II .	tt	
n-Propylbenzene	ND	0.50	u	11	"	ü	u	**	
Styrene	ND	0.50	11	u	Ħ	***	Ħ	n	
1,1,1,2-Tetrachloroethane	ND	0.50	*1	u	**	"	**	n	
1,1,2,2-Tetrachloroethane	ND	0.50	71	11	**	11	**	n	
Tetrachloroethene	1.9	0.50	**	**	n	**	"	"	
Toluene	ND	0.50	11	ff	н	n .	•	16	
1,2,3-Trichlorobenzene	ND	0.50	11	11	ų	"	U	र्ग	
1,2,4-Trichlorobenzene	ND	0.50	11	**	u	u	n n	11	
1,1,2-Trichloroethane	ND	0.50		n	11	11	Ħ	n	
1,1,1-Trichloroethane	ND	0.50	ш	п	13	#1	ff.	n	
Trichloroethene	ND	0.50	ш	u	11	11	11	n .	
Trichlorofluoromethane	ND	0.50	U.	**	11	#	**	11	
1,2,3-Trichloropropane	ND	0.50	**	***	11	n	**	H	
1,2,4-Trimethylbenzene	ND	0.50	11	Ŧŧ	н	n	U	U.	
1,3,5-Trimethylbenzene	ND	0.50	17	77	n	"	11	17	
Vinyl acetate	ND	5.0	T*	**	n	n	n	TT.	
Vinyl chloride	ND	0.50	77	**	n	n	n n	Ŧf	
m,p-Xylene	ND	0.50	17	n	11	н	и	71	
o-Xylene	ND	0.50	11	п	ш	11	11	n	
Surrogate: 1,2-Dichloroethane-d4		106 %	63-	-118	17	17	n	"	
Surrogate: Toluene-d8		98.0 %	73-	-125	"	Ħ	n	н	
Surrogate: 4-BFB		93.1 %	68-	-118	"	"	"	n	



Project: N/A

Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles **Reported:** 07/03/02 14:32

#### Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Analyte	Result	eporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFBTB1 (S206272-12) Water	Sampled: 06/18/02 00:00	Receiv	ed: 06/19	0/02 11:24					<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>
Acetone	ND	10	ug/l	1	2070001	07/02/02	07/02/02	EPA 8260B	
Benzene	ND	0.50	Ħ	"	f#	**	#1	Ħ	
Bromobenzene	ND	0.50	₹†	"	n	"	H	Ŧ1	
Bromochloromethane	ND	0.50	11	"	"	U	И	n	
Bromodichloromethane	ND	0.50	"	**	"	u	u	II.	
Bromoform	ND	0.50	и	**	**	11	31	11	
Bromomethane	ND	0.50	п	Ħ	**	**	Ħ	Ħ	
2-Butanone	ND	5.0	++	"	**	**	11	Ħ	
n-Butylbenzene	ND	0.50	"	n	ı,	"	n	77	
sec-Butylbenzene	ND	0.50	**	n	U	u	11	"	
Tert-butylbenzene	ND	0.50	11	स	u	**	f#	u	
Carbon disulfide	ND	5.0	11	**	11	**	**	Ħ	
Carbon tetrachloride	ND	0.50	п	"	H	**	**	ŧŧ	
Chlorobenzene	ND	0.50	11	U	n	n	и	н	
Chloroethane	ND	0.50	19	u	n .	10	U	11	
2-Chloroethylvinyl ether	ND	5.0	**	**	u	**	11	u	
Chloroform	ND	0.50		77	11	11	77	*1	
Chloromethane	ND	0.50	R	n	н	"	n	11	
2-Chlorotoluene	ND	0.50	11	u	0	u	n	U	
4-Chlorotoluene	ND	0.50	17	Ħ	n	**	11	u	
Dibromochloromethane	ND	0.50	11	**	**	11	77	"	
1,2-Dibromo-3-chloropropane	ND	1.0	11	15	17	h	U	**	
1,2-Dibromoethane (EDB)	ND	0.50	n	11	н	11	п	Ħ	
Dibromomethane	ND	0.50	ш	n	ч	ц	11	n	
1,2-Dichlorobenzene	ND	0.50	**	ш		**	**	п	
1,3-Dichlorobenzene	ND	0.50	77	tt	u	11	τŧ	u	
1,4-Dichlorobenzene	ND	0.50	n	**	75	ŋ	n	н	
Dichlorodifluoromethane	ND	0.50	11	n	**	u	II .	Ħ	
1.1-Dichloroethane	ND	0.50	u	п	U	u u	11*	n	
1,2-Dichloroethane	ND	0.50	u	п	u	11	11	n	
1.1-Dichloroethene	ND	0.50	11	**	u	Ħ	77	я	
cis-1,2-Dichloroethene	ND	0.50	77	**	17	"	11	u	
trans-1,2-Dichloroethene	ND	0.50	"	17	**	"	п	**	
1,2-Dichloropropane	ND	0.50	1)	"	"	n	u	n	
1,3-Dichloropropane	ND	0.50	п		n	"	Ħ	н	
2,2-Dichloropropane	ND	0.50	t <del>t</del>	Ħ	**	11	11	u u	
	ND	0.50	II.	11	***	"	,,	u	
1,1-Dichloropropene	ND	0.50	***	n	ff	10	11	u	
cis-1,3-Dichloropropene	ND ND	0.50	11	"	0	н	u	Ħ	
trans-1,3-Dichloropropene	ND ND	0.50	111	,,	n	"	"	†ŧ	
Ethylbenzene	ND	0.50							

Sequoia Analytical - Sacramento



Project: N/A

5117 Shelter Rd. McClellan CA, 95652 Project Number: 49AB01

**Reported:** 07/03/02 14:32

Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Project Manager: Walt Freeman/Lynn Mireles

Analyte	R Result	eporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFBTB1 (S206272-12) Water	Sampled: 06/18/02 00:00	Receiv	ed: 06/19	/02 11:24					
Freon 113	ND	0.50	ug/l	1	2070001	07/02/02	07/02/02	EPA 8260B	
Hexachlorobutadiene	ND	0.50	11	11	77	11	11	11	
2-Hexanone	ND	5.0	11	u	#1	n	11	Ħ	
Isopropylbenzene	ND	0.50	*11	ш	11	II .	**	**	
p-Isopropyltoluene	ND	0.50	п	u	"	II .	11	"	
Methylene chloride	3.2	0.50	n	u	11	н	**	n	
4-Methyl-2-pentanone	ND	5.0	11	11	11	II	75	н	
Methyl tert-butyl ether	ND	0.50	11	u	ti ti	11	**	U	
Naphthalene	ND	0.50	11	**	n	"	n	II .	
n-Propylbenzene	ND	0.50	11	**	ii	17	11	u	
Styrene	ND	0.50	11	**	U	11	υ	п	
1,1,1,2-Tetrachloroethane	ND	0.50	*11	**	U	17	II	**	
1,1,2,2-Tetrachloroethane	ND	0.50	11	**	**	77	н		
Tetrachloroethene	ND	0.50	11	**	**	**	u	1#	
Toluene	ND	0.50	11	17	**	"	н	Ħ	
1,2,3-Trichlorobenzene	ND	0.50	11	#	17	11	**	n	
1,2,4-Trichlorobenzene	ND	0.50		78	7*	n	11	n	
1,1,2-Trichloroethane	ND	0.50	n	n	10	a	77	n	
1,1,1-Trichloroethane	ND	0.50	ш	11	п	U	**	n	
Trichloroethene	ND	0.50	u	n	11	II.	**	II	
Trichlorofluoromethane	ND	0.50	u	n	п	**	"	U	
1,2,3-Trichloropropane	ND	0.50	10	II	и	**	11	a	
1,2,4-Trimethylbenzene	ND	0.50	u	n	п	17	0	u	
1,3,5-Trimethylbenzene	ND	0.50	11	n	п	**	n	Ħ	
Vinyl acetate	ND	5.0	11	11	11	11	a	**	
Vinyl chloride	ND	0.50	11	n	u	**	u	79	
m,p-Xylene	ND	0.50	н	n	U	11	u	Ħ	
o-Xylene	ND	0.50	ш	u	Ħ	11	Ħ	11	
Surrogate: 1,2-Dichloroethane-d4		97.8 %	63-	118	**	#	"	п	
Surrogate: Toluene-d8		97.5 %	73-	125	P	n	rr .	Ħ	
Surrogate: 4-BFB		90.4 %	68-	118	"	n	rr rr	н	



Project: N/A
Project Number: 49AB01

Project Manager: Walt Freeman/Lynn Mireles

Reported: 07/03/02 14:32

# Volatile Organic Compounds by EPA Method 8260B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFBTB2 (S206272-13) Water	Sampled: 06/18/02 00:0		ed: 06/19	9/02 11:24					
Acetone	ND	10	ug/l	1	2070001	07/02/02	07/02/02	EPA 8260B	
Benzene	ND	0.50	#1	Ħ	n	II	77	**	
Bromobenzene	ND	0.50	*1	71	u	Ħ	n	11	
Bromochloromethane	ND	0.50	**	**	**	**	11	"	
Bromodichloromethane	ND	0.50	11	11	†1	11	11	u	
Bromoform	ND	0.50	11	11	11	U	11	U	
Bromomethane	ND	0.50	a	"	**	II	13	#1	
2-Butanone	ND	5.0	Ħ	**	"	77	11	**	
n-Butylbenzene	ND	0.50	11	**	11	77	И	**	
sec-Butylbenzene	ND	0.50	29	11	#1	μ	tt.	n .	
Tert-butylbenzene	ND	0.50	11	n	11	"	17	ш	
Carbon disulfide	ND	5.0	,,,	п	11	TT .	11	<b>tt</b>	
Carbon tetrachloride	ND	0.50	"	Ü	"	<b>#</b> 7	"	**	
Chlorobenzene	ND	0.50	41	**	п	H	u	11	
Chloroethane	ND	0.50	PT .	***	n	ц	**	n	
2-Chloroethylvinyl ether	ND	5.0	19	11	tt	11	77	u	
Chloroform	ND	0.50	11	n	11	17	n	"	
Chloromethane	ND	0.50	u	a	н	n	U	11	
2-Chlorotoluene	ND	0.50	**	11	11	и	Ħ	71	
4-Chlorotoluene	ND	0.50	17	**	**	"	77	n	
Dibromochloromethane	ND	0.50	**	"	**	77	11	U	
1,2-Dibromo-3-chloropropane	ND	1.0	н	0	н	11	11		
1,2-Dibromoethane (EDB)	ND	0.50	o		n	и	11	**	
Dibromomethane	ND	0.50	u	a	u	11*	**	**	
1,2-Dichlorobenzene	ND	0.50		**	11	"	**	"	
1,3-Dichlorobenzene	ND	0.50	11	**	17	n	n .	n	
1,4-Dichlorobenzene	ND	0.50	11	++	**	n	н	п	
Dichlorodifluoromethane	ND	0.50	11	"	n	н	U	Ħ	
1.1-Dichloroethane	ND	0.50	11	"	u	**	11	**	
1,2-Dichloroethane	ND	0.50	u	"	"	17	71	1#	
1,1-Dichloroethene	ND	0.50	**	11	17	†1	n	n	
cis-1,2-Dichloroethene	ND	0.50	77	11	"	11	11	"	
trans-1,2-Dichloroethene	ND	0.50	**	**	н	и	**	n	
1,2-Dichloropropane	ND	0.50	h	U	n	#	11	(1	
1,3-Dichloropropane	ND	0.50	n n	IJ	16	**	#f	Ħ	
2,2-Dichloropropane	ND	0.50	ш	11	11	U	11	н	
1,1-Dichloropropene	ND	0.50		17	11		v	п	
cis-1,3-Dichloropropene	ND	0.50	77	**	**	и	u	"	
trans-1,3-Dichloropropene	ND	0.50	##	н	p	**	Ħ	u	
	ND ND	0.50	**	"	А	**	#	u	
Ethylbenzene	ND	0.50							

Sequoia Analytical - Sacramento



Project: N/A

5117 Shelter Rd. McClellan CA, 95652 Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles Reported: 07/03/02 14:32

		porting		una raj . a	<b>5</b> 05				
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MAFBTB2 (S206272-13) Water	Sampled: 06/18/02 00:00	Receiv	ed: 06/19	9/02 11:24					
Freon 113	ND	0.50	ug/l	1	2070001	07/02/02	07/02/02	EPA 8260B	
Hexachlorobutadiene	ND	0.50	n	11	11	**	#1	H	
2-Hexanone	ND	5.0	u	**	11	**	**	п	
Isopropylbenzene	ND	0.50	"	"	77	1)	ff	II	
p-Isopropyltoluene	ND	0.50	**	н	11	н	"	u	
Methylene chloride	3.2	0.50	**	"	n	н	11	I)	
4-Methyl-2-pentanone	ND	5.0	**	п	11	u	11	u	
Methyl tert-butyl ether	ND	0.50	##	tt.	"	111	0	ir .	
Naphthalene	ND	0.50	**	"	"	17	"	**	
n-Propylbenzene	ND	0.50	77	**	11	75	10	**	
Styrene	ND	0.50	**	#	†1	ry.	Ħ	71	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	11	n	Ħ	"	
1,1,2,2-Tetrachloroethane	ND	0.50	n	**	11	11	**	11	
Tetrachloroethene	ND	0.50	U	71	**	н	H	II	
Toluene	ND	0.50	u	n	II.	u	H	ti	
1,2,3-Trichlorobenzene	ND	0.50	#	II	U	Ħ	u	u	
1,2,4-Trichlorobenzene	ND	0.50	**	11	,,	11	u u	Ħ	
1,1,2-Trichloroethane	ND	0.50	71	**	tt	11	11	ŦF	
1,1,1-Trichloroethane	ND	0.50	77	FT	**	и	Ħ	11	
Trichloroethene	ND	0.50	17	**	**	u	71	77	
Trichlorofluoromethane	ND	0.50	11	"	11	"	n	n	
1,2,3-Trichloropropane	ND	0.50	"	11	**	#	rt .	п	
1,2,4-Trimethylbenzene	ND	0.50	n	11	11	Ħ	n	и	
1,3,5-Trimethylbenzene	ND	0.50	u	п		11	ij	u	
Vinyl acetate	ND	5.0	u u	ıı .	u	**	u		
Vinyl chloride	ND	0.50	u	ц	ti	11	"	tt.	
m,p-Xylene	ND	0.50	n	11	Ħ	п	n	Ħ	
o-Xylene	ND	0.50	**	++	Ħ	u	11	¥F.	
Surrogate: 1,2-Dichloroethane-d4		101 %	63-	-118	17	,,	n	"	
Surrogate: Toluene-d8		96.3 %	73	-125	Ħ	"	rr .	n	
Surrogate: 4-BFB		93.2 %	68	-118	"	"	rr ·	"	



819 Striker Ave Ste 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100 www.sequoialabs.com

Dolver Company Inc. 5117 Shelter Rd. McClellan CA, 95652 Project: N/A

Project Number: 49AB01
Project Manager: Walt Freeman/Lynn Mireles

Reported: 07/03/02 14:32

# Total Metals by EPA 6000/7000 Series Methods Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
7-BV-1-HSDemo (S206272-01) Water	Sampled: 06/1	18/02 13:42 F	Received: 0	6/19/02 1	1:24				
Mercury	ND	0.00020	mg/l	1	2F25011	06/25/02	06/26/02	EPA 7470A	
7-BV-1-HSDemo (not filtered) (S20627	/2-02) Water S	Sampled: 06/1	8/02 13:42	Receive	ed: 06/19/0	02 11:24			
Mercury	ND	0.00020	mg/l	1	2F25011	06/25/02	06/26/02	EPA 7470A	



Project: N/A

Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles

Reported: 07/03/02 14:32

#### Total Metals by EPA 6000/7000 Series Methods - Quality Control Sequoia Analytical - Sacramento

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 2060284 - EPA 3010A										·····
Blank (2060284-BLK1)				Prepared:	06/24/02	Analyzed	l: 06/25/02			
Antimony	ND	0.050	mg/l							
Arsenic	ND	0.050	u							
Barium	ND	0.050	11							
Beryllium	ND	0.0050	11							
Cadmium	ND	0.0050	# <b>†</b>							
Chromium	ND	0.0050	73							
Cobalt	ND	0.020	**							
Copper	ND	0.0050	"							
Lead	ND	0.050	и							
Molybdenum	ND	0.020	tr.							
Nickel	ND	0.020	**							
Selenium	ND	0.050	ff .							
Silver	ND	0.0050	"							
Thallium	ND	0.050	U							
Vanadium	ND	0.020	ш							
Zinc	0.0172	0.0050	u							Q-1
LCS (2060284-BS1)				Prepared:	06/24/02	Analyzeo	1: 06/25/02			
Arsenic	0.516	0.050	mg/l	0.500		103	80-120			
Cadmium	0.530	0.0050	0	0.500		106	80-120			
Chromium	0.527	0.0050	11	0.500		105	80-120			
Nickel	0.537	0.020	œ	0.500		107	80-120			
Zinc	0.545	0.0050	"	0.500		109	80-120			
Matrix Spike (2060284-MS1)	Se	ource: S20628	5-01	Prepared	06/24/02	Analyze	d: 06/25/02			
Arsenic	0.506	0.050	mg/l	0.500	ND	101	80-120			
Cadmium	0.515	0.0050	0	0.500	ND	103	80-120			
Chromium	0.510	0.0050	1)	0.500	ND	102	80-120			
Nickel	0.513	0.020	u	0.500	ND	103	80-120			
Zinc	0.529	0.0050	**	0.500	ND	106	80-120			



Project: N/A

Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles **Reported:** 07/03/02 14:32

# Total Metals by EPA 6000/7000 Series Methods - Quality Control Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2060284 - EPA 3010A										
Matrix Spike Dup (2060284-MSD1)	So	urce: S20628	5-01	Prepared:	06/24/02	Analyzed	: 06/25/02			
Arsenic	0.505	0.050	mg/l	0.500	ND	101	80-120	0.2	20	
Cadmium	0.512	0.0050	"	0.500	ND	102	80-120	0.6	20	
Chromium	0.506	0.0050	н	0.500	ND	101	80-120	0.8	20	
Nickel	0.511	0.020	Ħ	0.500	ND	102	80-120	0.4	20	
Zinc	0.550	0.0050	Ħ	0.500	ND	110	80-120	4	20	
Batch 2060311 - EPA 3010A										
Blank (2060311-BLK1)				Prepared:	06/25/02	Analyzed	1: 06/28/02			
Antimony	ND	0.050	mg/l							
Arsenic	ND	0.050	**							
Barium	ND	0.050	11							
Beryllium	ND	0.0050	и							
Cadmium	ND	0.0050	19							
Chromium	ND	0.0050	**							
Cobalt	ND	0.020	"							
Copper	ND	0.0050	п							
Lead	ND	0.050	n							
Molybdenum	ND	0.020	lt.							
Nickel	ND	0.020	tt							
Selenium	ND	0.050	77							
Silver	ND	0.0050	н							
Thallium	ND	0.050	n							
Vanadium	ND	0.020	u							
Zinc	ND	0.0050	11							
LCS (2060311-BS1)				Prepared	: 06/25/02	Analyzed	d: 06/28/02	2		
Arsenic	0.526	0.050	mg/l	0.500		105	80-120			
Cadmium	0.520	0.0050		0.500		104	80-120			
Chromium	0.516	0.0050	**	0.500		103	80-120			
Nickel	0.526	0.020	ft	0.500		105	80-120			
Zinc	0.522	0.0050	**	0.500		104	80-120			



Dolver Company Inc. 5117 Shelter Rd.

McClellan CA, 95652

Project: N/A

Project Number: 49AB01

Project Manager: Walt Freeman/Lynn Mireles

Reported: 07/03/02 14:32

#### Total Metals by EPA 6000/7000 Series Methods - Quality Control Sequoia Analytical - Sacramento

		Reporting		Spike	Source		%REC	vo 20.00	RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 2060311 - EPA 3010A	www									
Matrix Spike (2060311-MS1)	Sou	rce: S20622	5-01	Prepared:	06/25/02	Analyzed	: 06/28/02			
Arsenic	0.505	0.050	mg/l	0.500	ND	101	80-120			
Cadmium	0.514	0.0050	11	0.500	ND	103	80-120			
Chromium	0.504	0.0050	"	0.500	ND	101	80-120			
Nickel	0.508	0.020	н	0.500	ND	102	80-120			
Zinc	0.510	0.0050		0.500	ND	102	80-120			
Matrix Spike Dup (2060311-MSD1)	Sou	rce: S20622	5-01	Prepared:	06/25/02	Analyzed	1: 06/28/02			
Arsenic	0.502	0.050	mg/l	0.500	ND	100	80-120	0.6	20	
Cadmium	0.513	0.0050	87	0.500	ND	103	80-120	0.2	20	
Chromium	0.504	0.0050	*1	0.500	ND	101	80-120	0	20	
Nickel	0.505	0.020	11	0.500	ND	101	80-120	0.6	20	
Zinc	0.510	0.0050	n	0.500	ND	102	80-120	0	20	



Project: N/A

5117 Shelter Rd. McClellan CA, 95652 Project Number: 49AB01
Project Manager: Walt Freeman/Lynn Mireles

Reported:

07/03/02 14:32

# Volatile Organic Compounds by EPA Method 8260B - Quality Control Sequoia Analytical - San Carlos

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Blank (2070001-BLK1)			
Acetone	ND	10	ug/l
Benzene	ND	0.50	n
Bromobenzene	ND	0.50	11
Bromochloromethane	ND	0.50	u
Bromodichloromethane	ND	0.50	111
Bromoform	ND	0.50	u
romomethane	ND	0.50	
-Butanone	ND	5.0	<b>31</b>
-Butylbenzene	ND	0.50	**
ec-Butylbenzene	ND	0.50	11
ert-butylbenzene	ND	0.50	p
Carbon disulfide	ND	5.0	11
Carbon tetrachloride	ND	0.50	u
Chlorobenzene	ND	0.50	u
Chloroethane	ND	0.50	**
2-Chloroethylvinyl ether	ND	5.0	TŤ
Chloroform	ND	0.50	**
hloromethane	ND	0.50	11
-Chlorotoluene	ND	0.50	11
-Chlorotoluene	ND	0.50	ø
Dibromochloromethane	ND	0.50	
,2-Dibromo-3-chloropropane	ND	1.0	n
,2-Dibromoethane (EDB)	ND	0.50	и
Dibromomethane	ND	0.50	**
,2-Dichlorobenzene	ND	0.50	**
,3-Dichlorobenzene	ND	0.50	**
,4-Dichlorobenzene	ND	0.50	11
Dichlorodifluoromethane	ND	0.50	п
1,1-Dichloroethane	ND	0.50	11
1,2-Dichloroethane	ND	0.50	n
1,1-Dichloroethene	ND	0.50	
cis-1,2-Dichloroethene	ND	0.50	q
trans-1,2-Dichloroethene	ND	0.50	***
1,2-Dichloropropane	ND	0.50	**
1,3-Dichloropropane	ND	0.50	17
2,2-Dichloropropane	ND	0.50	**

Sequoia Analytical - Sacramento



Project: N/A

5117 Shelter Rd. McClellan CA, 95652 Project Number: 49AB01
Project Manager: Walt Freeman/Lynn Mireles

Reported: 07/03/02 14:32

# Volatile Organic Compounds by EPA Method 8260B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2070001 - EPA 5030B [P/T]										
Blank (2070001-BLK1)				Prepared	& Analyz	ed: 07/01/0	)2			
1,1-Dichloropropene	ND	0.50	ug/l							
cis-1,3-Dichloropropene	ND	0.50	п							
trans-1,3-Dichloropropene	ND	0.50	"							
Ethylbenzene	ND	0.50	н							
Freon 113	ND	0.50	и							
Hexachlorobutadiene	ND	0.50	u							
2-Hexanone	ND	5.0	**							
Isopropylbenzene	ND	0.50	fr.							
o-Isopropyltoluene	ND	0.50	**							
Methylene chloride	ND	0.50	**							
4-Methyl-2-pentanone	ND	5.0	11							
Methyl tert-butyl ether	ND	0.50	"							
Naphthalene	ND	0.50	u							
n-Propylbenzene	ND	0.50	n							
Styrene	ND	0.50	11							
1,1,2-Tetrachloroethane	ND	0.50	**							
1,1,2,2-Tetrachloroethane	ND	0.50	f†							
Tetrachloroethene	ND	0.50	11							
Toluene	ND	0.50	11							
1,2,3-Trichlorobenzene	ND	0.50	U							
1,2,4-Trichlorobenzene	ND	0.50	п							
1,1,2-Trichloroethane	ND	0.50	a							
1,1,1-Trichloroethane	ND	0.50	11							
Trichloroethene	ND	0.50	#*							
Tríchlorofluoromethane	ND	0.50	71							
1,2,3-Trichloropropane	ND	0.50	**							
1,2,4-Trimethylbenzene	ND	0.50	11							
1,3,5-Trimethylbenzene	ND	0.50	11							
Vinyl acetate	ND	5.0	n							
Vinyl chloride	ND	0.50	п							
m,p-Xylene	ND	0.50								
o-Xylene	ND	0.50	ш							
Surrogate: 1,2-Dichloroethane-d4	9.32		n	10.0		93.2	63-118			
Surrogate: Toluene-d8	9.84		n	10.0		98.4	73-125			
Surrogate: 4-BFB	9.30		r	10.0		93.0	68-118			

Sequoia Analytical - Sacramento



Project: N/A

Project Number: 49AB01
Project Manager: Walt Freeman/Lynn Mireles

**Reported:** 07/03/02 14:32

# Volatile Organic Compounds by EPA Method 8260B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2070001 - EPA 5030B [P/T]										
Blank (2070001-BLK1)				Prepared	& Analyz	ed: 07/01/0	)2			
Blank (2070001-BLK2)				Prepared	& Analyz	ed: 07/01/0	)2			
Acetone	ND	10	ug/l							
Benzene	ND	0.50	"							
Bromobenzene	ND	0.50	*1							
Bromochloromethane	ND	0.50	**							
Bromodichloromethane	ND	0.50	**							
Bromoform	ND	0.50	n							
Bromomethane	ND	0.50	U							
2-Butanone	ND	5.0	,11							
n-Butylbenzene	ND	0.50	**							
sec-Butylbenzene	ND	0.50	87							
Tert-butylbenzene	ND	0.50	"							
Carbon disulfide	ND	5.0	11							
Carbon tetrachloride	ND	0.50	u							
Chlorobenzene	ND	0.50	**							
Chloroethane	ND	0.50	н							
2-Chloroethylvinyl ether	ND	5.0	**							
Chloroform	ND	0.50	77							
Chloromethane	ND	0.50	11							
2-Chlorotoluene	ND	0.50								
4-Chlorotoluene	ND	0.50	u							
Dibromochloromethane	ND	0.50	**							
1,2-Dibromo-3-chloropropane	ND	1.0	#5							
1,2-Dibromoethane (EDB)	ND	0.50	"							
Dibromomethane	ND	0.50	n							
1,2-Dichlorobenzene	ND	0.50	u							
1,3-Dichlorobenzene	ND	0.50	"							
1,4-Dichlorobenzene	ND	0.50	**							
Dichlorodifluoromethane	ND	0.50	11							
1,1-Dichloroethane	ND	0.50	**							
1,2-Dichloroethane	ND	0.50	n							
1,1-Dichloroethene	ND	0.50	"							
cis-1,2-Dichloroethene	ND	0.50	u							
trans-1,2-Dichloroethene	ND	0.50	11							
1,2-Dichloropropane	ND	0.50	11							

Sequoia Analytical - Sacramento





Project: N/A

Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles

Reported: 07/03/02 14:32

#### Volatile Organic Compounds by EPA Method 8260B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2070001 - EPA 5030B [P/T]			····							
Blank (2070001-BLK2)				Prepared	& Analyzo	ed: 07/01/0	)2			
1,3-Dichloropropane	ND	0.50	ug/l							
2,2-Dichloropropane	ND	0.50	**							
1,1-Dichloropropene	ND	0.50	"							
cis-1,3-Dichloropropene	ND	0.50	tt.							
trans-1,3-Dichloropropene	ND	0.50	**							
Ethylbenzene	ND	0.50	**							
Freon 113	ND	0.50	n n							
Hexachlorobutadiene	ND	0.50	u							
2-Hexanone	ND	5.0	17							
Isopropylbenzene	ND	0.50	Ħ							
p-Isopropyltoluene	ND	0.50	n							
Methylene chloride	ND	0.50	11							
4-Methyl-2-pentanone	ND	5.0	17							
Methyl tert-butyl ether	ND	0.50	11							
Naphthalene	ND	0.50	u							
n-Propylbenzene	ND	0.50	<b>??</b>							
Styrene	ND	0.50	77							
1,1,1,2-Tetrachloroethane	ND	0.50								
1,1,2,2-Tetrachloroethane	ND	0.50	и							
Tetrachloroethene	ND	0.50	t <del>1</del>							
Toluene	ND	0.50	**							
1,2,3-Trichlorobenzene	ND	0.50	н							
1,2,4-Trichlorobenzene	ND	0.50	u							
1,1,2-Trichloroethane	ND	0.50	17							
1,1,1-Trichloroethane	ND	0.50	**							
Trichloroethene	ND	0.50	п							
Trichlorofluoromethane	ND	0.50	a							
1,2,3-Trichloropropane	ND	0.50	11							
1,2,4-Trimethylbenzene	ND	0.50	n							
1,3,5-Trimethylbenzene	ND	0.50	n							
Vinyl acetate	ND	5.0	11							
Vinyl chloride	ND	0.50	11							
m,p-Xylene	ND	0.50	"							
o-Xylene	ND	0.50	U							
Surrogate: 1,2-Dichloroethane-d4	10.9		,,	10.0		109	63-118			



Project: N/A

5117 Shelter Rd. Project Number: 49AB01
McClellan CA, 95652 Project Manager: Walt Freeman/Lynn Mireles

Reported: 07/03/02 14:32

# Volatile Organic Compounds by EPA Method 8260B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2070001 - EPA 5030B [P/T]										
Blank (2070001-BLK2)				Prepared	& Analyz	ed: 07/01/	02			
Surrogate: Toluene-d8	9.75		ug/l	10.0		97.5	73-125			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Surrogate: 4-BFB	9.45		"	10.0		94.5	68-118			
Blank (2070001-BLK3)				Prepared	& Analyz	ed: 07/02/	02			
Acetone	ND	10	ug/l							
Benzene	ND	0.50	n							
Bromobenzene	ND	0.50	н							
Bromochloromethane	ND	0.50	Ħ							
Bromodichloromethane	ND	0.50	11							
Bromoform	ND	0.50	11							
Bromomethane	ND	0.50	**							
2-Butanone	ND	5.0	11							
n-Butylbenzene	ND	0.50	н							
sec-Butylbenzene	ND	0.50	н							
Tert-butylbenzene	ND	0.50	11							
Carbon disulfide	ND	5.0	11							
Carbon tetrachloride	ND	0.50	11							
Chlorobenzene	ND	0.50	"							
Chloroethane	ND	0.50	n							
2-Chloroethylvinyl ether	ND	5.0	u							
Chloroform	ND	0.50	u							
Chloromethane	ND	0.50	**							
2-Chlorotoluene	ND	0.50	**							
4-Chlorotoluene	ND	0.50	**							
Dibromochloromethane	ND	0.50	**							
1,2-Dibromo-3-chloropropane	ND	1.0	11							
1,2-Dibromoethane (EDB)	ND	0.50	11							
Dibromomethane	ND	0.50	"							
1,2-Dichlorobenzene	ND	0.50	"							
1,3-Dichlorobenzene	ND	0.50	11							
1,4-Dichlorobenzene	ND	0.50	FT							
Dichlorodifluoromethane	ND	0.50	n							
1,1-Dichloroethane	ND	0.50	n							
1,2-Dichloroethane	ND	0.50	"							
1,1-Dichloroethene	ND	0.50	п							



Project: N/A

5117 Shelter Rd. McClellan CA, 95652 Project Number: 49AB01
Project Manager: Walt Freeman/Lynn Mireles

**Reported:** 07/03/02 14:32

# Volatile Organic Compounds by EPA Method 8260B - Quality Control Sequoia Analytical - San Carlos

		Reporting		Spike	Source		%REC		RPD	
An	llyte Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 2070001 - EPA 5030B [P/T]				
Blank (2070001-BLK3)				Prepared & Analyzed: 07/02/02
cis-1,2-Dichloroethene	ND	0.50	ug/l	
trans-1,2-Dichloroethene	ND	0.50	н	
1,2-Dichloropropane	ND	0.50	n	
1,3-Dichloropropane	ND	0.50	,,,	
2,2-Dichloropropane	ND	0.50	11	
1,1-Dichloropropene	ND	0.50	щ	
cis-1,3-Dichloropropene	ND	0.50	IF	
trans-1,3-Dichloropropene	ND	0.50	##	
Ethylbenzene	ND	0.50	**	
Freon 113	ND	0.50	11	
Hexachlorobutadiene	ND	0.50	Ŧf	
2-Hexanone	ND	5.0	**	
sopropylbenzene	ND	0.50	1)	
o-Isopropyltoluene	ND	0.50	n	
Methylene chloride	ND	0.50	н	
-Methyl-2-pentanone	ND	5.0	U	
Methyl tert-butyl ether	ND	0.50	u	
laphthalene	ND	0.50	11	
-Propylbenzene	ND	0.50	17	
ityrene	ND	0.50	11	
,1,1,2-Tetrachloroethane	ND	0.50	**	
1,1,2,2-Tetrachloroethane	ND	0.50	<b>11</b>	
Fetrachloroethene	ND	0.50	37	
Foluene	ND	0.50	11	
,2,3-Trichlorobenzene	ND	0.50	μ	
,2,4-Trichlorobenzene	ND	0.50	11	
,1,2-Trichloroethane	ND	0.50	n	
1,1,1-Trichloroethane	ND	0.50	ш	
Trichloroethene	ND	0.50	u	
Trichlorofluoromethane	ND	0.50	10	
1,2,3-Trichloropropane	ND	0.50	и	
1,2,4-Trimethylbenzene	ND	0.50	17	
1,3,5-Trimethylbenzene	ND	0.50	77	
Vinyl acetate	ND	5.0	**	
Vinyl chloride	ND	0.50	71	
m,p-Xylene	ND	0.50	**	

Sequoia Analytical - Sacramento



Project: N/A

Project Number: 49AB01
Project Manager: Walt Freeman/Lynn Mireles

**Reported:** 07/03/02 14:32

# Volatile Organic Compounds by EPA Method 8260B - Quality Control Sequoia Analytical - San Carlos

		Reporting		Spike	Source	A/DEC	%REC	DBD	RPD	3.7	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	
Batch 2070001 - EPA 5030B [P/T]		W			·····						
Blank (2070001-BLK3)				Prepared	& Analyze	d: 07/02/0	)2				
o-Xylene	ND	0.50	ug/l								
Surrogate: 1,2-Dichloroethane-d4	9,92		n	10.0		99.2	63-118				
Surrogate: Toluene-d8	9.89		"	10.0		98.9	73-125				
Surrogate: 4-BFB	9.17		r	10.0		91.7	68-118				
LCS (2070001-BS1)	Prepared & Analyzed: 07/01/02										
Benzene	19.9	0.50	ug/l	20.0		99.5	70-130				
Chlorobenzene	20.3	0.50	**	20.0		102	70-130				
1,1-Dichloroethene	18.4	0.50	**	20.0		92.0	65-135				
Toluene	20.0	0.50	11	20.0		100	70-130				
Trichloroethene	19.2	0.50	H	20.0		96.0	70-130				
Surrogate: 1,2-Dichloroethane-d4	10.6		,,	10.0		106	63-118				
Surrogate: Toluene-d8	9.90		μ	10.0		99.0	73-125				
Surrogate: 4-BFB	9.94		n	10.0		99.4	68-118				
LCS (2070001-BS2)				Prepared	& Analyze	ed: 07/01/	02				
Benzene	20.4	0.50	ug/l	20.0		102	70-130				
Chlorobenzene	20.6	0.50	u	20.0		103	70-130				
1,1-Dichloroethene	20.2	0.50	**	20.0		101	65-135				
Toluene	20.7	0.50	**	20.0		104	70-130				
Trichloroethene	20.1	0.50	Ħ	20.0		100	70-130				
Surrogate: 1,2-Dichloroethane-d4	10.3		"	10.0		103	63-118			<del></del>	
Surrogate: Toluene-d8	9.89		n	10.0		98.9	73-125				
Surrogate: 4-BFB	9.71		"	10.0		97.1	68-118				
LCS (2070001-BS3)				Prepared	& Analyz	ed: 07/02/	02				
Benzene	20.1	0.50	ug/l	20.0		100	70-130				
Chlorobenzene	20.3	0.50	'n	20.0		102	70-130				
1,1-Dichloroethene	19.4	0.50	0	20.0		97.0	65-135				
Toluene	20.1	0.50	11	20.0		100	70-130				
Trichloroethene	19.6	0.50	II.	20.0		98.0	70-130				

Sequoia Analytical - Sacramento



Project: N/A

5117 Shelter Rd. McClellan CA, 95652 Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles **Reported:** 07/03/02 14:32

#### Volatile Organic Compounds by EPA Method 8260B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Anatyte	Kezmi	LIIII	Omis	Level	Resurc	70KEC	Lillits	KFD	Lillit	140162
Batch 2070001 - EPA 5030B [P/T]										
LCS (2070001-BS3)				Prepared	& Analyz	ed: 07/02/0	02			
Surrogate: 1,2-Dichloroethane-d4	10.4		ug/l	10.0		104	63-118			
Surrogate: Toluene-d8	9.79		"	10.0		97.9	73-125			
Surrogate: 4-BFB	9.44		**	10.0		94.4	68-118			
Matrix Spike (2070001-MS1)	Sou	rce: L20607	4-01	Prepared	& Analyz	ed: 07/01/	02			
Benzene	20.5	0.50	ug/l	20.0	ND	102	60-140			
Chlorobenzene	20.8	0.50	и	20.0	ND	104	60-140			
1,1-Dichloroethene	19.7	0.50	11	20.0	ND	98.5	60-140			
Toluene	20.6	0.50	Ħ	20.0	0.54	100	60-140			
Trichloroethene	19.7	0.50	17	20.0	ND	98.5	60-140			
Surrogate: 1,2-Dichloroethane-d4	11.6		Ħ	10.0		116	63-118			
Surrogate: Toluene-d8	10.1		"	10.0		101	73-125			
Surrogate: 4-BFB	9.87		#	10.0		98.7	68-118			
Matrix Spike Dup (2070001-MSD1)	Source: L206074-01			Prepared & Analyzed: 07/01/02						
Benzene	20.2	0.50	ug/l	20.0	ND	101	60-140	1.47	25	
Chlorobenzene	19.6	0.50	**	20.0	ND	98.0	60-140	5.94	25	
1,1-Dichloroethene	19.4	0.50	11	20.0	ND	97.0	60-140	1.53	25	
Toluene	19.6	0.50	n	20.0	0.54	95.3	60-140	4.98	25	
Trichloroethene	18.9	0.50	"	20.0	ND	94.5	60-140	4.15	25	
Surrogate: 1,2-Dichloroethane-d4	11.7		#	10.0		117	63-118			
Surrogate: Toluene-d8	9.78		"	10.0		97.8	73-125			
Surrogate: 4-BFB	9.84		"	10.0		98.4	68-118			





Project: N/A

Project Number: 49AB01 Project Manager: Walt Freeman/Lynn Mireles Reported: 07/03/02 14:32

# Total Metals by EPA 6000/7000 Series Methods - Quality Control Sequoia Analytical - Walnut Creek

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2F25011 - EPA 200 Series										
Blank (2F25011-BLK1)				Prepared:	06/25/02	Analyzed	l: 06/26/02			
Mercury	ND	0.00020	mg/l							
LCS (2F25011-BS1)				Prepared:	06/25/02	Analyzed	1: 06/26/02			
Mercury	0.00211	0.00020	mg/l	0.00200		106	75-125			
LCS Dup (2F25011-BSD1)				Prepared:	06/25/02	Analyzed	l: 06/26/02			
Mercury	0.00206	0.00020	mg/l	0.00200		103	75-125	2.40	20	
Matrix Spike (2F25011-MS1)	Sou	ırce: W2063	47-01	Prepared:	06/25/02	Analyzed	l: 06/26/02			
Mercury	0.00200	0.00020	mg/l	0.00200	ND	100	75-125			
Matrix Spike Dup (2F25011-MSD1)	Sou	ırce: W2063	47-01	Prepared:	06/25/02	Analyzed	i: 06/26/02			
Mercury	0.00200	0.00020	mg/l	0.00200	ND	100	75-125	0.00	20	



819 Striker Ave Ste 8 Sacramento, CA 95834 (916) 921-9600 FAX (916) 921-0100 www.sequoialabs.com

Dolver Company Inc.

Project: N/A

5117 Shelter Rd.

Project Number: 49AB01

Reported:

McClellan CA, 95652

Project Manager: Walt Freeman/Lynn Mireles

07/03/02 14:32

#### **Notes and Definitions**

AF-B The analyte was found in the associated blank as well as in the sample.

Q-19 The method blank contains this compound at a concentration above the method reporting limit. This should be considered in

evaluating the data for its intended purpose.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

# APPENDIX C NORMALITY PLOTS

