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By Alameda County Environmental Health at 11:14 am, Aug 04, 2014

July 24, 2014

Rita and Tony Sullins Don Sul Inc. 187 North L Street Livermore, CA 94550

Re:

Transmittal Letter

Site Location:

Arrow Rentals

187 North L Street, Livermore, CA 94550

Dear Mr. Wickham:

On behalf of Rita and Tony Sullins, Don Sul Inc., Ground Zero Analysis, Inc. (GZA) prepared the 1st 2013 Semi-Annual Groundwater Monitoring, dated July 24, 2014 that was sent to your office via electronic delivery per Alameda County's guidelines.

I declare under penalty of law that the information and/or recommendations contained in the above referenced document or report is true and correct to the best of my knowledge.

Respectfully submitted,

Rita / Tony Sullins Property Owner

Don Sul Inc.

187 North L Street

Livermore, CA 94550



1172 Kansas Avenue, Suite A Modesto, CA 95351 209.522.4119 - PH 209.522.4227 - FAX groundzeroanalysis.com

REPORT

1st Semi-Annual Groundwater Monitoring & Remedial Effectiveness (Performed in 2nd Quarter: June 2014)

Arrow Rentals Service 187 North L St. Livermore, CA 94550

> Project No. 1262.2 July 24, 2014

Prepared for:
Tony & Rita Sullins
Arrow Rentals Service
187 North L St.
Livermore, CA 94550

Prepared by:

Ground Zero Analysis, Inc. 1172 Kansas Ave. Modesto, California 95351 (209) 522-4119



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July 24, 2014

Project No.: 1262.2

Project Name: Sullins (L St.)

Tony & Rita Sullins Arrow Rentals Service 187 North L Street Livermore, CA 94550

RE: Report: 1st Semi-Annual Groundwater Monitoring & Remedial Effectiveness

Performed 2nd Ouarter, June 2014

Location: 187 North L Street, Livermore, CA 94550.

(ACEH Fuel Leak Case No. RO0000394)

Dear Mr. & Ms. Sullins:

Ground Zero Analysis, Inc. has prepared the following Report for the 1st Semi-Annual 2014 groundwater monitoring event performed between June 16th and June 17th, 2014, at the 187 North L Street property in Livermore, CA. In addition, the remedial activities performed during the 1st and 2nd Quarters of 2014 will be discussed. An elevated core of gasoline contamination persists in the location of and down-gradient (northwest) of the former USTs/piping. The Corrective Action Plan (CAP) and the Dual Phase Extraction (DPE) and air sparging systems which were started on November 15th, 2011 and March 21st, 2012 (respectively) and they continue to operate.

If you have any questions, please do not hesitate to call me at (209) 522-4119.

Respectfully submitted,

Raynold I. Kablanow II, PhD

PG, CHG, REAII

cc: Jerry Wickham - ACEH

USTCUF (Via Geotracker)

TABLE OF CONTENTS

1.0	EXECUTIVE SUMMARY	1			
1.1	SITE HISTORY				
1.2	SITE SETTING AND GEOLOGY	3			
2.0	GROUNDWATER MONITORING	4			
2.1	GROUNDWATER ELEVATION AND FLOW DIRECTION	4			
2.2	GROUNDWATER SAMPLING PROCEDURE	5			
2.3	LABORATORY ANALYSES	6			
3.0	FINDINGS AND DISCUSSION	7			
3.1	FIELD PARAMETERS	7			
3.2	LABORATORY ANALYTICAL DATA	7			
4.0	REMEDIATION SYSTEM STATUS & EFFECTIVENESS	10			
4.1	System Operation	11			
4.2	TREATMENT SYSTEM DATA	12			
4.3	FUTURE DPE OPERATION	14			
5.0	CONCLUSIONS & RECOMMENDATIONS	14			
6.0	LIMITATIONS	16			
7.0	SIGNATURES & CERTIFICATION	16			
	FIGURES				
VICIN	NITY MAP	1			
SITE		2			
	DETAIL MAP W/ CROSS SECTION LINES	3			
	L SCREENED INTERVAL DIAGRAM	4			
	JNDWATER GRADIENT MAP SHALLOW WELLS JNDWATER GRADIENT MAP INTERMEDIATE WELLS	5A 5B			
	JNDWATER GRADIENT MAP INTERMEDIATE WELLS JNDWATER GRADIENT MAP DEEP WELLS	5B 5C			
	LOW WELL TPH-G CONCENTRATIONS	6			
	RMEDIATE WELL TPH-G CONCENTRATIONS	7A			
	RMEDIATE WELL BENZENE CONCENTRATIONS	7R 7B			
	WELL TPH-G CONCENTRATIONS	8			
	PH OF TPH-G CONCENTRATION VS. TIME W-1s	9A			
GRAF	PH OF BENZENE CONCENTRATION VS. TIME W-1s	9B			
GRAF	PH OF TPH-G CONCENTRATION VS. TIME W-3S	102			
GRAF	PH OF BENZENE CONCENTRATION VS. TIME W-3S	101			
GRAF	PH OF TPH-G CONCENTRATION VS. TIME W-Bs	112			
	GRAPH OF BENZENE CONCENTRATION VS. TIME W-Bs				
	SS SECTION A-A' W/ GROUNDWATER TPH-G CONCENTRATIONS	12			
	SS SECTION B-B' W/ GROUNDWATER TPH-G CONCENTRATIONS	13			
CONT	FAMINANT TRENDS IN INTERMEDIATE CORE WELLS: W-I AND W-A	14			

APPENDICES

SUMMARY TABLES	A
Table 1A: Summary of Groundwater Elevation and Gradient – Water Table Wells	
Table 1B: Summary of Groundwater Elevation and Gradient – Intermediate Wells	
Table 1C: Summary of Groundwater Elevation and Gradient – Deep Wells	
Table 2: Summary of Vertical Groundwater Gradients	
Table 3: Summary of Well Construction	
Table 4: Summary of Groundwater Analytical Data	
Table 5: Summary of Field Parameters	
Table 6: Mass Removal Calculations: Groundwater	
Table 7: Mass Removal Calculations: Soil Vapor	
Table 8: Summary of DPE System Groundwater Extraction Data	
Table 9: Summary of DPE System Soil Vapor Extraction Data	
LABORATORY ANALYTICAL DATA SHEETS	В
GROUNDWATER MONITORING FIELD LOGS	C
VERTICAL GROUNDWATER GRADIENT CALCULATION PROCEDURE	D
DUAL PHASE EXTRACTION SYSTEM DATA CORRELATION	\mathbf{E}



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REPORT

1st Semi-Annual Groundwater Monitoring & Remedial Effectiveness

Arrow Rentals Services 187 North L St. Livermore, CA

> Project No. 1262.2 July 24, 2014

1.0 EXECUTIVE SUMMARY

This report summarizes the results of the 1st Semi-Annual 2014 groundwater monitoring and sampling event that took place between June 16th and June 17th, 2014. In addition, the remedial activities performed during the 1st and 2nd Quarters of 2014 will be included in this report.

The average shallow groundwater elevation at the site was 437.07 feet above mean sea level (msl) and the average depth to water was 42.44 feet below ground surface (bgs). This represents a decrease of 7.76 feet since the December 2013 monitoring event and a decrease of 6.23 feet since the June 2013 monitoring event. The shallow groundwater flow was southwest (S59°W) at a slope of 0.0255 ft/ft for this event.

The analytical results of groundwater samples show that detectable concentrations of gasoline range petroleum hydrocarbons were present in all fifteen of the site's groundwater monitoring wells sampled during this event. Historically, a persistent core of high concentrations has remained in the vicinity of wells W-1/W-1s/CMT-4, which are located adjacent to former USTs/piping trenches and is down gradient of the former UST system. A secondary core of high concentrations persists in the vicinity of CMT-5 in the intermediate zone (MW-205), which is down-gradient of the Pitcock Release.

GZA is currently implementing the Corrective Action Plan (CAP) which includes the operation of a Dual Phase Extraction (DPE) system and an air sparging system to treat the

residual contamination at the site, which was started on November 15th, 2011 and March 21st, 2012, respectively. As of the end of the 2nd Quarter 2014, the DPE system has removed a total of approximately 11,459.6 pounds, or 1863.3 gallons, of gasoline hydrocarbons as TPH-G. During the 1st and 2nd Quarters of 2014, the DPE system operated for 2,300 hours and removed a total of approximately 408.8 pounds or 66.5 gallons of gasoline hydrocarbons as TPH-G.

Recommendations

- 1. Continue groundwater monitoring as directed by Alameda County Environmental Health in their most recent email dated October 6th, 2011.
- 2. In the event that the groundwater elevation rises enough to allow for sampling of the shallow CMT well intervals (MW-4, MW-5/105, MW-6/106, MW-7/107 & MW-8/108), we recommend that the opportunity be taken at it's soonest event.
- 3. It is recommended that the DPE system operate in a pulse mode, as discussed in Section 4.3 of this report.
- 4. In consideration of the Low Threat Closure Policy Path to Closure document dated February 25, 2014; GZA recommends continuing the implementation of the Corrective Action Plan (CAP) and operating the Dual Phase Extraction (DPE) and air sparging systems thru the 2nd Quarter of 2015 followed by 6 months of verification monitoring. Following the 6 months of verification monitoring, GZA will assess whether further remediation is necessary.

1.1 Site History

Gasoline range petroleum hydrocarbons associated with underground storage tank (UST) systems have been documented in soil and groundwater at 187 North L Street, Livermore, CA (sees Figures 1 and 2 for vicinity and site maps).

The work performed to date is summarized below*:

- 1972 Three 1,500 gallon gasoline USTs removed.
- 1984 A single 1,000 gallon gasoline UST installed.
- 1986 Two gasoline USTs removed (4,000 & 6,000 gallon).
- June 1985 Pitcock Petroleum dispenses ~600 gallons into a vapor monitoring well adjacent to the 1,000 gasoline UST (Pitcock Release).
- September 1988 Three monitoring wells installed (W-1, W-2 and W-3).
- March 1989 Five soil borings advanced (B-1 through B-5).
- May 1989 Three monitoring wells installed (W-1, W-2 and W-3).
- July 1990 Five monitoring wells installed (W-A through W-E), three soil borings advanced (B-7, B-8 and B-1A), and a soil gas survey was completed.
- March 1991 A single soil boring advanced (B-F).
- January 1992 UST pipeline soil excavation and sampling, two soil borings advanced (B-G and B-H).

- March 1994 Dual Phase Extraction pilot test performed.
- March 1996 Four monitoring wells installed (W-1s, W-Bs, W-3s and W-Es).
- 1998- Soil gas survey.
- November 2005 Soil gas survey.
- October 2006 Five continuous tubing multi-Chambered wells installed (the MW-4/104/204/304/404 through MW-8/108/208/308 series).
- October 2006 Dual Phase Extraction pilot test performed.
- August 2007 Final Corrective Action Plan prepared.
- April 2011 Begin implementation of Corrective Action Plan.
- November 2011 Start-up of Dual Phase Extraction (DPE) system.
- March 2012 Start-up of air sparging system
- 1988 to present intermittent monitoring/sampling of select monitoring wells.
 - * Data from Woodward Clyde Consultants, GTI, & ACEH documentation.

1.2 Site Setting and Geology

The site is in the central portion of the City of Livermore, California, which is located in the Livermore Valley. The shallow sediments (<100 feet below grade) investigated in the project are Pleistocene (recent) alluvial fan and flood plain deposits [source: Geologic Map of California, San Jose Sheet, Division of Mines and Geology, 1966 (truncated geologic map copy located in Appendix D)].

The subject property is at an elevation of approximately 480 feet above mean sea level based on an October 16, 2006 survey conducted by Keir & Wright Engineers Surveyors Inc. of Livermore, California. Regionally, the surrounding area slopes to the west [source: USGS, Livermore Quadrangle, 7.5 Minute Series Topographic Map, 1980 photo-revision (truncated topographic map copy located in Appendix D)].

The subjective field observations of various field geologists and associated boring logs documented during this investigation were included in GTI's December 18, 2006 SCM report. The subsurface lithology falls into two predominant categories – clayey/sandy gravels and clays; with minor amounts of silt and sand units. The site exhibits little correlation between boreholes and this situation is exacerbated by the fact that different geologists logged the boreholes and a five foot sampling interval was utilized in the past. The Site's geology is summarized as consisting primarily of gravelly units from the surface to approximately 35 – 45 feet bgs. Below these depths are 15 to 20 feet of clayey units that seem to retard the vertical migration of contaminants. These fine grained units are underlain by more gravels and a second clay horizon at approximately 78 feet bgs. Silts and sand units are present in the soil profile but are thin (usually a few inches thick, but much less than 5 feet thick) and less frequent than the soils noted above.

2.0 GROUNDWATER MONITORING

2.1 Groundwater Elevation and Flow Direction

The average groundwater elevation in the site's shallow water table wells was 437.07 feet above mean sea level (amsl) on June 16th, 2014. This corresponds to 42.44 feet below grade surface (bgs) and represents a decrease of 7.76 feet since the December 2013 monitoring event and a decrease of 6.23 feet since the June 2013 monitoring event. The depth to groundwater observed in the site's wells has ranged from approximately 20 - 44 feet below grade surface from 1989 to 2012. Refer to Figures 1 through 3 for site details, well and borehole locations.

GTI grouped the five CMTTM well sets installed in October 2006 and existing wells according to the aquifer interval that the screened section intercepted (see Table 3 in Appendix A for well construction details, and Figure 4 for well screen intervals):

Shallow Wells (screened 20 – 45 feet bgs):

W-1s, W-Bs, W-3s, W-Es, and either {MW-4, MW-5, MW-6, MW-7, MW-8} or {MW-105, MW-106, MW-107, MW-108} depending on groundwater elevation

Intermediate Wells (screened 40 – 60 feet bgs):

W-1, W-3, W-A, MW-104, MW-205, MW-206, MW-207, MW-208. Notes:

- Well W-1 is considered intermediate and is monitored; however the well is not utilized for groundwater gradient measurements due to modifications to the well top for remedial purposes.
- Monitoring well W-2 cannot be located following the construction of the housing complex to the south and southeast of the site.
- Monitoring well W-3 could not be monitored since an access agreement could not be obtained from Signature Properties.

Deep Wells (screened ~ 65 feet bgs):

MW-204, MW-305, MW-306, MW-307, MW-308

Deepest Wells (screened > 70 feet bgs):

MW-304, MW-404

The groundwater elevation data are summarized in Tables 1A, 1B and 1C of Appendix A, for the shallow, intermediate and deep/deepest aquifer levels, respectively.

Horizontal Groundwater Gradients:

The calculated gradients for the June 2014 monitoring event are as follows:

Aquifer Zone:	<u>Gradient:</u>	<u>Bearing</u> :
Water table	0.0255	S59°W
Intermediate	0.076	N74°W
Deep	0.012	N49°W

Figures 5A illustrates the shallow aquifer groundwater gradient map for the June 2014 monitoring event. Figure 5B and 5C illustrate the intermediate and deep aquifer gradient maps, respectively.

Vertical Groundwater Gradients:

GZA calculated vertical gradients for well pairs MW-204/304, MW-205/305, MW-206/306 and MW-207/307 for the June 2014 monitoring event, which are as follows:

0	MW-204/304	negative (or downward) at -0.012 ft/ft.
0	MW-205/305	negative (or downward) at -0.045 ft/ft.
0	MW-206/306	negative (or downward) at -0.004 ft/ft.
0	MW-207/307	positive (or upward) at 0.012 ft/ft.

Figure 3 shows the location of the well pairs used for calculating vertical groundwater gradient in this report: MW-204/304, MW-205/305 MW-206/306, and MW-207/307; Table 2 in Appendix A shows the calculated vertical gradients. The procedure for calculating the vertical groundwater gradient is included in Appendix D.

2.2 Groundwater Sampling Procedure

Between June 16th and June 17th, 2014, Ground Zero Analysis, Inc. (GZA) staff mobilized to the site to conduct depth-to-water measurements and purging & sampling of the site's monitoring wells. Before sampling was attempted, the wells were sounded for depth to water and groundwater levels recorded with exceptions as noted. The CMTTM wells were purged of at least three well volumes of stagnant water by hand. The non-CMTTM wells were purged of at least three well volumes of stagnant water using a dedicated Waterra check-ball. Purging continued until the temperature, conductivity, and pH of the groundwater stabilized (<10% variation in three consecutive readings), indicating that formation water representative of aquifer conditions was entering the wells.

Once purging was complete, water samples were collected from the Waterra poly tube. Care was taken to minimize sample agitation. Once a sample container was filled and capped, the bottle was inverted, tapped and checked for headspace bubbles. The sample container was identified and labeled with a unique designation, inserted into a foam holder and placed into an ice chest cooled to 4°C for transport to the laboratory. Disposable gloves were used by the technician to collect all samples and were changed with each sample collection.

The following deviations from the sampling protocol are noted:

• Several CMT[™] wells did not contain enough water to purge and collect samples. Samples were not collected from the following wells: MW-4, MW-5, MW-6, MW-7, MW-8, MW-105, MW-106, MW-107 and MW-108 during the June 2014 event.

A chain of custody document, listing all samples collected, accompanied the samples from field to laboratory, thereby providing a means to track the movement of and ensure the integrity of the samples.

All well purge water was placed in a 55 gallon DOT approved container. Upon completing the groundwater monitoring event, all purge water was pumped from drums and into the DPE system for remediation prior to being discharged to the sanitary sewer system.

Groundwater monitoring field logs are included in Appendix C.

2.3 Laboratory Analyses

The groundwater samples collected during the June 2014 groundwater monitoring event were delivered to BC Laboratories of Bakersfield, California (certification #1186) for analyses.

The groundwater samples were analyzed for:

- Benzene, Toluene, Ethyl Benzene and Xylene (BTEX) by EPA method 8260b
- Total Petroleum Hydrocarbons as Gasoline (TPH-G) by EPA method 8260b
- Oxygenated Fuel Compound MTBE by EPA method 8260b

The results and detection limits for the above analyses are listed in Table 4 of Appendix A while the lab analytical results are presented in Appendix B.

As required under AB2886, the depth to groundwater data for the 1st Semiannual 2014 was submitted to GeoTracker on July 25, 2014 – confirmation number 3261526525. Laboratory data was submitted to GeoTracker on July 28, 2014 – confirmation number 4777864575.

3.0 FINDINGS AND DISCUSSION

3.1 Field Parameters

For the June 2014 event:

- Dissolved Oxygen (DO) ranged from 0.17 (W-A) to 1.64 (W-Bs).
- Electrical Conductivity (EC) ranged from 803 (W-Bs) to 1,352 (W-A).
- Oxygen Reduction Potential (ORP) ranged from -135 (W-A) to -50.1 (W-3s).
- pH ranged from 6.42 (W-A) to 7.05 (W-Bs).
- Temperature ranged from 20.7 °C (W-A) to 21.3 °C (W-1s).

Field parameters were collected while purging all monitoring wells except the five CMTTM wells. The field parameter results are shown in Table 5 of Appendix A.

3.2 Laboratory Analytical Data

Since the initiation of the Dual-Phase Extraction (DPE) remediation system (November 2011), the May 2012, November 2012, June 2013 and June 2014 groundwater monitoring events have reported historically low groundwater elevation levels, which is believed to be related to the elevated contaminant concentrations reported during these events. The December 2013 groundwater monitoring event reported the highest groundwater levels since the initiation of DPE and overall historical low contaminant concentrations in the core of the groundwater plume. Generally, concentrations slightly increased during the June 2014 groundwater monitoring event.

As shown in Figure 9, contaminant concentrations in the core of the plume tend to be elevated during low groundwater periods. The December 2013 event reported an increase in groundwater levels and a decrease in contaminant concentrations within the core of the groundwater plume while the June 2014 event reported a decrease in groundwater levels and an increase in contaminant concentrations.

The shallow wells less than 40 feet below ground surface were not sampled during the June 2014 event and have not been sampled since the DPE system was started in November 2011. It is anticipated that as groundwater levels rise, concentrations in the shallow wells will report decreased concentrations following extensive vadose zone remediation between 42 and 25 feet below grade surface.

Shallow Aquifer:

CMT wells MW-4, MW-5, MW-6, MW-7, MW-8 were dry during the June 2014 groundwater monitoring event and were not sampled. CMT wells MW-105, MW-106, MW-107 and MW-108 did not contain a large enough water column to properly purge and sample. Theses shallow wells have not been sampled since prior to starting DPE

remediation in November 2011, making it difficult to assess the performance of the DPE system in these shallow wells.

- Shallow monitoring well W-1s reported the highest concentrations of TPH-g (320 µg/l) and shallow monitoring well W-Bs reported the highest concentration of benzene (26 µg/l) of all the wells sampled in the shallow aquifer. Contaminant concentrations in wells W-Bs and W-1s appear to be decreasing over time.
- The shallow aquifer TPH-g plume has historically appeared to be moving down-gradient over time, as suggested by the increasing concentrations in MW-107, which has been dry during the previous five (5) groundwater monitoring events. Concentrations in down-gradient well MW-207 and far down-gradient well W-3s appear to be decreasing, suggesting the shallow groundwater plume is slowly moving down gradient towards well CMT-7 while decreasing in concentration. However, the data is incomplete and further groundwater monitoring events will allow for a better evaluation of seasonal fluctuations.
- Monitoring wells W-1s and W-Bs reported a decrease in both TPH-G and benzene concentrations for the June 2014 groundwater monitoring event.
- Monitoring wells W-Es and W-3s were not sampled during the June 2014 groundwater monitoring event due to low groundwater levels.
- Figure 6 shows a contour map indicating GZA's interpretation of the shallow TPH-g plume in June 2014.

Intermediate Aquifer:

- Well W-1 reported the highest concentrations of TPH-g (25,000 μg/l) and well MW-207 reported the highest concentration of benzene (5,900 μg/l) in the intermediate aquifer. Contaminant concentrations in W-1 appear to be on an overall decreasing trend while concentrations in well MW-207 appear to be on a decreasing trend since June 2013.
- The core of the intermediate aquifer TPH-g plume appears to move around from one monitoring event to the next, as suggested by the historical fluctuation of the plume center between W-1, W-A, MW-104 and MW-205, with contaminant concentrations on an overall decreasing trend, both increasing and decreasing. Figure 7A and 7B contain a contour map indicating GZA's interpretation of the intermediate TPH-g and benzene plumes in June 2014, respectively.
- Remediation by DPE and air sparging in wells W-A and W-1 appears to have decreased the contaminant mass in the core of the plume in the vicinity of well W-A, as shown in Figures 7A and 7B. This is supported by the overall decreasing contaminant concentrations in intermediate core wells W-1, W-A and MW-104, which all reported an increase in contaminant concentrations for the June 2014 event. This increase in contaminant concentrations is attributed to the 7.76 foot decrease in the groundwater elevation since the December 2013 monitoring event. Figure 14 is a

- graph depicting the decreasing contaminant trends in intermediate core wells W-1 and W-A.
- Concentrations in wells MW-205 and MW-207 appear to have stabilized and began
 decreasing since June 2013 while down gradient well MW-208 appears to be
 decreasing over time, suggesting the intermediate plume has stabilized.

Deep Aquifer:

- CMTTM monitoring well MW-308 reported the highest concentration of TPH-g (3,000 μg/l) and CMTTM monitoring well MW-308 reported the highest concentrations of benzene (1,300 μg/l) in the deep aquifer.
- Concentrations reported in the deep wells during the June 2014 event suggest that
 remediation is occurring in the core of the plume based on decreasing concentrations
 in core well MW-204. However unstable trends in wells MW-305, MW-307 and
 MW-308 make it difficult to understand what is occurring in the deep aquifer upgradient and down-gradient of the contaminant core.
- Figure 8 contains a contour map indicating GZA's interpretation of the deep TPH-g plume in June 2014. The groundwater plume is localized in the vicinity of the former USTs/piping trenches and appears to be centered between wells MW-204 and MW-308.

Deepest Aquifer

- CMTTM well MW-304 reported an increase in TPH-g and benzene for the June 2014 monitoring event.
- CMTTM well MW-404 reported an increase in TPH-g and benzene for the June 2014 monitoring event.

<u>Figures</u>

- Figures 9A and 9B illustrate TPH-g and benzene concentrations and groundwater elevation versus time in well W-1s (located in the vicinity of the core of the contaminant plume). With the exception of events in 1995, 1997 and 2001 the contaminant concentrations exhibit a fairly stable trend. The graphs show an inverse relationship between groundwater elevation and concentrations. The three peaks evident correspond with low stands of groundwater and suggest that significant contaminant mass is present although decades have past since the original USTs were removed. The June 2014 monitoring event represents a near historical low concentration of TPH-g and benzene in this well despite the low groundwater elevation conditions.
- Figures 10A and 10B illustrate TPH-g and benzene concentrations and groundwater elevations versus time in well W-3s (located down/cross gradient of the core of the plume). The contaminant concentrations show an overall declining trend, despite several elevated spikes in concentrations in 1996, 1997, 1998 and 2003. These events

of elevated concentration do not show a correlation with low groundwater elevations, as was observed in W-1s. Since the start of remediation in November 2011, groundwater contaminant concentrations have been on a decreasing trend in this well. Well MW-3s was not sampled during the June 2014 groundwater monitoring event due to low groundwater levels.

- Figure 11A and 11B illustrate TPH-g and benzene concentrations versus time in well W-Bs (located down gradient of the core of the plume). The contaminant concentrations showed a rapid declining trend from 1995 thru 2003 but appear to be stable but fluctuating from 2003 thru April of 2011. A declining trend began in 2011 and continued into the June 2014 monitoring event.
- Figures 12 and 13: Cross Sections A-A' and B-B' illustrate the site's geology and the distribution of groundwater contaminants prior to (October 2011 event) and following remediation (June 2014 event). As shown, the site is underlain with an upper gravelly unit (Upper Unit) from the surface to approximately 35 to 45 feet bgs and a lower clay unit (Lower Unit) from 35/45 feet to approximately 65 feet bgs and appears to inhibit the migration of the contamination below this unit. According the *Final Corrective Action Plan* dated August 1st, 2007, the extent of the sites soil contamination lies in the groundwater smear zone between 20 and 45 or greater feet below grade surface (bgs).

4.0 REMEDIATION SYSTEM STATUS & EFFECTIVENESS

A dual phase extraction (DPE) and an air sparging remediation system were installed at the site and operations commenced in November 2011 and March 2012, respectively. The remedial action consists of dual phase extraction (DPE - soil vapor and groundwater) and air sparging in four (4) of the sites core wells:

- Vadose zone well EW-1 is used to remove soil vapor from the vadose zone
- Shallow depth well W-1s is used to remove soil vapor from the smear zone
- Intermediate depth well W-1 is used to remove soil vapor and groundwater and as of July 2013 can be utilized for air sparging
- Intermediate depth well W-A is used for air sparging and can be utilized to remove soil vapor and groundwater

According the *Final Corrective Action Plan* dated August 1st, 2007, the extent of the sites soil contamination lies in the groundwater smear zone between 20 and 45 or greater feet below grade surface (bgs). The sites general geology consists of an upper gravelly unit (Upper Unit) from the surface to approximately 35 to 45 feet bgs and a lower clay unit (Lower Unit) from 35/45 feet to approximately 65 feet bgs and appears to inhibit the migration of the contamination below this unit. Remediation wells W-1s and EW-1 are

screened within the Upper Unit (screened across 10 to 45 feet bgs). Remediation wells W-1 and W-A are screened within the Lower Unit (screened across 42 to 57.5 feet bgs). Therefore, the screen intervals of the four (4) remediation wells include both the Upper and Lower Units as well as the vertical extent of the soil contamination (20 to 45+ feet bgs).

A site map showing the distribution of the remediation wells and cross section lines is provided as Figure 3. A cross section illustrating the sites geology and remediation wells is provided as Figures 12 and 13.

4.1 System Operation

The extracted vapors are treated with a thermal oxidizer and then discharged to ambient air under permit from the Bay Area Air Quality Management District (BAAQMD). The treated water is discharged to the municipal sewer system under permit from the City of Livermore.

The groundwater extracted by DPE is initially separated from the vapor phase via a knockout tank, with groundwater residing in the tank and the vapor phase continues on to the thermal oxidizer for treatment. The water is then pumped from the tank to an air stripper column to remove volatile organic petroleum hydrocarbons. The vapors generated by the air stripper are plumbed back to the thermal oxidizer joining the DPE extracted vapors. The treated groundwater is plumbed to two (2) 2000 lbs. granulated activated carbon vessels in series after leaving the air stripper. The water is then monitored with an LEL sensor for contaminant levels while being discharged to the sewer system under associated permit requirements.

System operation commenced on November 15th, 2011 (soil vapor extraction only), in compliance with the Alameda County Environmental Health (ACEH) directive extension. Various system repairs and modifications were completed following the initial start-up and full operation of the DPE system (soil vapor extraction only) began on November 29th, 2011.

Modifications to DPE well W-1 were completed and groundwater extraction testing began on December 7th, 2011. On January 10th, 2012, Alan Wilcox from the City of Livermore met on-site to perform the groundwater discharge permit inspection. Upon issuance of the groundwater discharge permit, the DPE system began full operation and extraction and treatment of both groundwater and soil vapor on January 18th, 2012.

Both the DPE and air sparging systems have been in continuous operation since March 2012, except for minor repairs. Both the DPE and air sparge systems were shut down on May 12th, 2014 in anticipation of the 2nd Quarter 2014 groundwater monitoring event that was performed between June 16th and June 17th, 2014.

1st & 2nd Ouarters 2014

The DPE system operated throughout the 1st and 2nd Quarters of 2014 except for the following reasons:

- February 25, 2014 thru March 18, 2014 the DPE system is being operated in pulse mode and was off during this time period.
- April 1, 2014 thru April 15, 2014 the DPE system is being operated in pulse mode and was off during this time period.
- April 28, 2014 thru May 9, 2014 the DPE system is being operated in pulse mode and was off during this time period.
- May 12, 2014 thru June 26, 2014 the DPE system was shut down for the 2nd Quarter 2014 groundwater monitoring event and for routine maintenance.

Starting in the 1st Quarter 2013 and continued thru the 1st and 2nd Quarters of 2014, DPE remediation was pulsed but focused on wells screened in the lower clay layer (W-1 and W-A) in order to reduce contaminant concentrations in this unit. Based on decreasing contaminant concentrations in wells screened within this layer and a decline in contaminant concentrations of the DPE vapor stream when extracting from intermediate wells W-1 and W-A, remediation of the lower clay layer is occurring.

4.2 Treatment System Data

As of the end of the 2nd Quarter 2014, the DPE system has removed a total of approximately 11,459.6 pounds, or 1863.3 gallons, of gasoline hydrocarbons as TPH-G in both vapor and groundwater extraction. During the 1st and 2nd Quarters of 2014, the DPE system operated for 2,300 hours and removed a total of approximately 408.8 pounds or 66.5 gallons of gasoline hydrocarbons as TPH-G.

Soil Vapor Extraction Mass Removal

As of the end of the 2nd Quarter 2014, the DPE system has removed approximately 11,305.7 pounds, or 1,838.3 gallons of strictly soil-vapor gasoline hydrocarbons as TPH-G since operation began on November 15th, 2011. Since the start of the 1st Quarter 2014, the DPE system removed approximately 364.4 pounds, or 59.3 gallons of soil vapor gasoline hydrocarbons as TPH-G.

These amounts do not include effluent vapors from the air stripper that are plumbed from the air stripper to the thermal oxidizer since none of the samples were collected during the operation of the air stripper. The mass of TPH-G treated by the thermal oxidizer is summarized in Table 7 of Appendix A.

Groundwater Extraction Mass Removal

Mass removal calculations are completed utilizing the results of monthly sampling of the influent groundwater stream for laboratory analyses. As of the end of the 2nd quarter 2014,

the DPE system had removed approximately 153.9 pounds, or 25 gallons, of gasoline hydrocarbons as TPH-G from groundwater extraction. Since the start of the 1st Quarter 2014, the DPE system removed approximately 44.4 pounds, or 7.2 gallons, of gasoline hydrocarbons as TPH-G. GZA believes the groundwater mass removal calculations are conservative given that the groundwater is highly agitated as it passes through approximately 90 feet of piping, a liquid-ring pump and a transfer pump prior to the sample collection port.

The mass of TPH-G removed by groundwater extraction and treated by air stripping and running through granular activated carbon is summarized in Table 6 of Appendix A.

Assumptions

- Average vapor concentrations used in the mass removal calculations assume that the daily concentration of TPH-G removed by the system is equivalent to the concentration of TPH-G sampled during the following bi-monthly event. For example: If analyses were performed twice a month (every 2 weeks), the average daily concentration for that two (2) week time period is assumed equivalent to the sample concentration of the sample collected from the sampling event at the end of the 2 week period.
- Daily airflow is assumed to be equivalent to the airflow reading from the following sampling event.
- Vapor concentrations are collected using a PID and data is recorded in parts per million (ppm) and correlated to laboratory results that are reported in milligrams per cubic meter (mg/m³). When vapor samples were collected for laboratory analysis, a PID reading was collected directly from the sample and following various sampling events, the data was correlated and an equation was produced. For more information on data correlation, refer to Appendix E.
- The mass removed as vapor does not include vapor phase contaminants "stripped" from the groundwater in the air stripper as none of the vapor sampling occurred while the air stripper was operating, which occurs for approximately 90 minutes per day.
- Concentration of aqueous phase removal is based on actual analytical results taken from the line following the knockout drum and prior to the first groundwater storage tank. The bi-monthly analytical results are assumed constant for the previous two (2) week period. It is likely the concentrations, thus the mass removed from the extraction wells, is higher at the well than is measured at the sampling point for the following reasons:
 - The groundwater extraction is achieved by high vacuum and soil vapor extraction from the wells, which result in withdraws of both soil vapor and groundwater. This air/water mixture is transported through 90 feet of piping to the DPE unit where the two phases are separated in the knockout drum. So in essence, the piping system acts as a linear air stripper causing the VOCs in the water to transfer into the vapor phase.

4.3 Future DPE Operation

Based on groundwater monitoring data and elevated contaminant concentrations being removed from the lower clay layer, GZA recommends continued pulse-mode operation of the DPE system and air sparging system during the 3rd and 4th Quarters of 2014. The pulse mode will continue as follows:

- 1. Two weeks remediating the lower clay unit by operating groundwater and vapor extraction from wells W-A and W-1, followed by;
- 2. Two weeks remediating the upper gravel unit (vadose zone) by operating core vapor extraction well W-1s while the air sparging system operates in wells W-1 and W-A.

If concentrations in the upper gravel unit are insignificant, GZA recommends that the system be shut down during this two week period and operate the lower clay unit wells during the other two weeks of the month.

5.0 CONCLUSIONS & RECOMMENDATIONS

Conclusions

- 1. Elevated concentrations of BTEX and TPH-g are present in a laterally limited (probably less than 150 foot radius in the down gradient direction) groundwater plume that is centered near W-1/W-1s/CMT-4, with the core between the vicinity CMTTM Cluster 7, CMTTM Cluster 5 and wells W-1/W-1s/CMT-4.
- 2. The groundwater plume appears to attenuate to the northeast at CMTTM Cluster 6, to the northwest at W-3s and W-3. The extent of the plume is unknown to the north and south.
- 3. TPH-G and BTEX concentrations in shallow monitoring wells W-1s, W-Bs and W-3s appear to be on decreasing contaminant trends, as shown in Figures 9A, 9B, 10A, 10B, 11A & 11B.
- 4. Remediation by DPE and air sparging in wells W-A and W-1 appears to have decreased the contaminant mass in the core of the plume, as shown in Figures 7, 8 and 14. This is supported by the overall decreasing contaminant concentrations in intermediate core wells W-1, W-A and MW-104.
- 5. Concentrations in wells MW-205 and MW-207 appear to have stabilized and began decreasing since June 2013 while down gradient well MW-208 appears to be decreasing over time, suggesting the intermediate plume has stabilized.
- 6. Wells MW-205, MW-207 and MW-208 may be outside of the zone of influence of the DPE system, however additional data would be needed to confirm this.
- 7. Concentrations reported in the deep wells during the June 2014 event suggest that remediation is occurring in the core of the plume based on decreasing concentrations in core well MW-204. However, unstable trends in wells MW-305, MW-307 and

- MW-308 make it difficult to understand what is occurring in the deep aquifer upgradient and down-gradient of the contaminant core.
- 8. Increasing contaminant concentrations in the site's deep wells (MW-304 & MW-404) is attributed to the historically low groundwater, drawing the contaminant smear zone closer to these wells.
- 9. Overall the contaminant concentrations at the site are following a decreasing trend, as shown in the graphs included in this report.
- 10. It appears that there is a direct relationship between groundwater elevation and contaminant concentrations. It is hypothesized that the low groundwater levels during the May 2012, November 2012, June 2013 and June 2014 groundwater monitoring event may be responsible for the high concentrations reported in some wells near the top of groundwater during those events. Groundwater levels during the December 2013 groundwater monitoring event had risen to average levels and in turn contaminant concentrations decreased overall. Continued sampling will allow for further evaluation of this relationship.

Recommendations

- 1. Continue groundwater monitoring as directed by Alameda County Environmental Health in their most recent email dated October 6th, 2011.
- 2. In the event that the groundwater elevation rises enough to allow for sampling of the shallow CMT well intervals (MW-4, MW-5/105, MW-6/106, MW-7/107 & MW-8/108), we recommend that the opportunity be taken at its soonest event.
- 3. It is recommended that the DPE system operate in a pulse mode, as discussed in Section 4.3 of this report.
- 4. In consideration of the Low Threat Closure Policy Path to Closure document dated February 25, 2014; GZA recommends continuing the implementation of the Corrective Action Plan (CAP) and operating the Dual Phase Extraction (DPE) and air sparging systems thru the 2nd Quarter of 2015 followed by 6 months of verification monitoring. Following the 6 months of verification monitoring, GZA will assess whether further remediation is necessary.

6.0 LIMITATIONS

This report was prepared in accordance with the generally accepted standard of care and practice in effect at the time Services were rendered. It should be recognized that definition and evaluation of environmental conditions is an inexact science and that the state or practice of environmental geology/hydrology is changing and evolving and that standards existing at the present time may change as knowledge increases and the state of the practice continues to improve. Further, that differing subsurface soil characteristics can be experienced within a small distance and therefore cannot be known in an absolute sense. All conclusions and recommendations are based on the available data and information.

The tasks proposed and completed during this project were reviewed and approved by the local regulatory agency for compliance with the law. No warranty, expressed or implied, is made.

7.0 SIGNATURES & CERTIFICATION

This report was prepared by:

Andrew Dorn, B.Sc. Geology

Staff Geologist

California GIT (#411)

This report was prepared under the direction of:

Raynold I. Kablanow II, PhD

PG and CHG



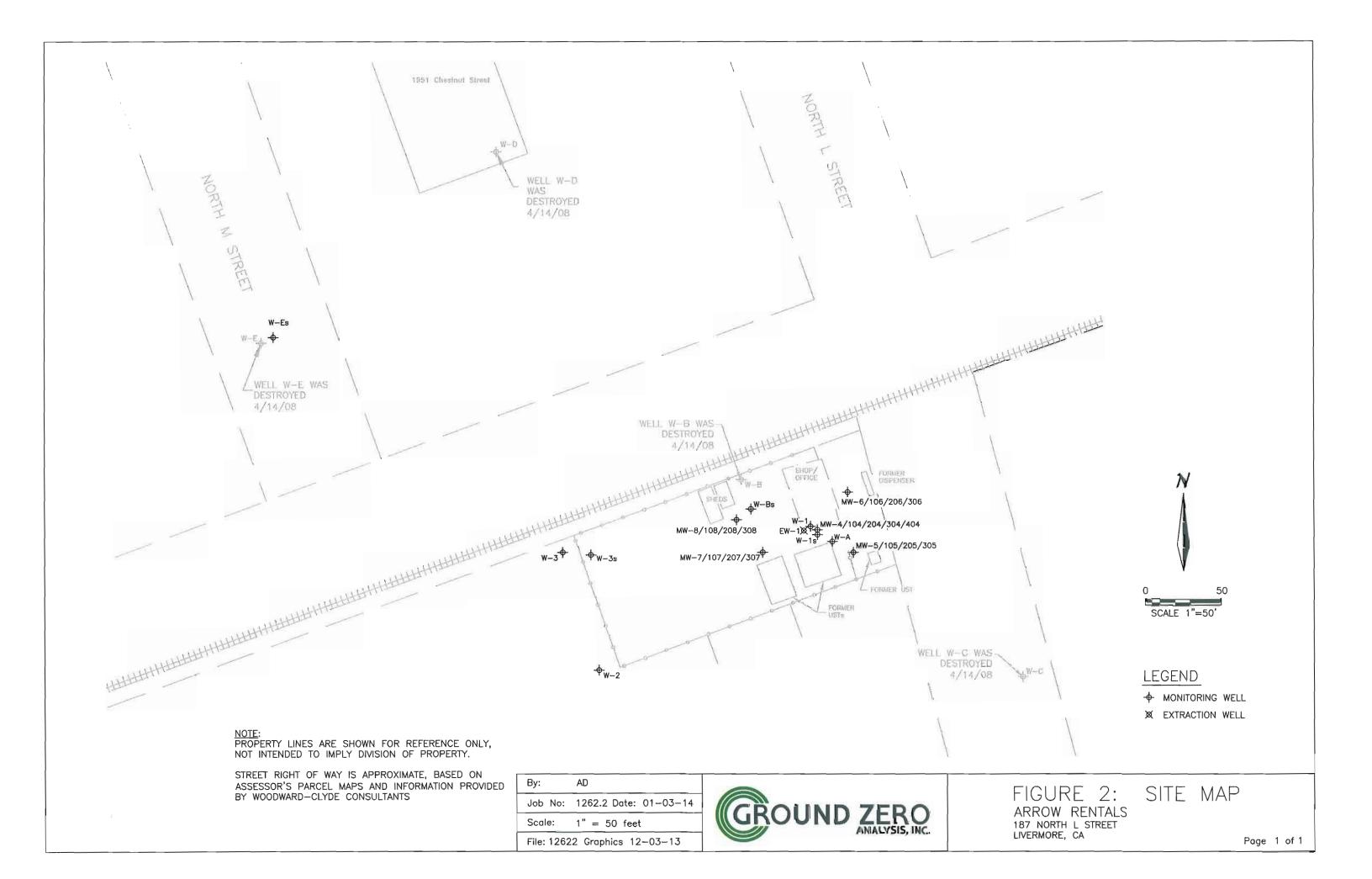
MN (13.7°E)

1" = 1,600.0 ft

Data Zoom 13-4

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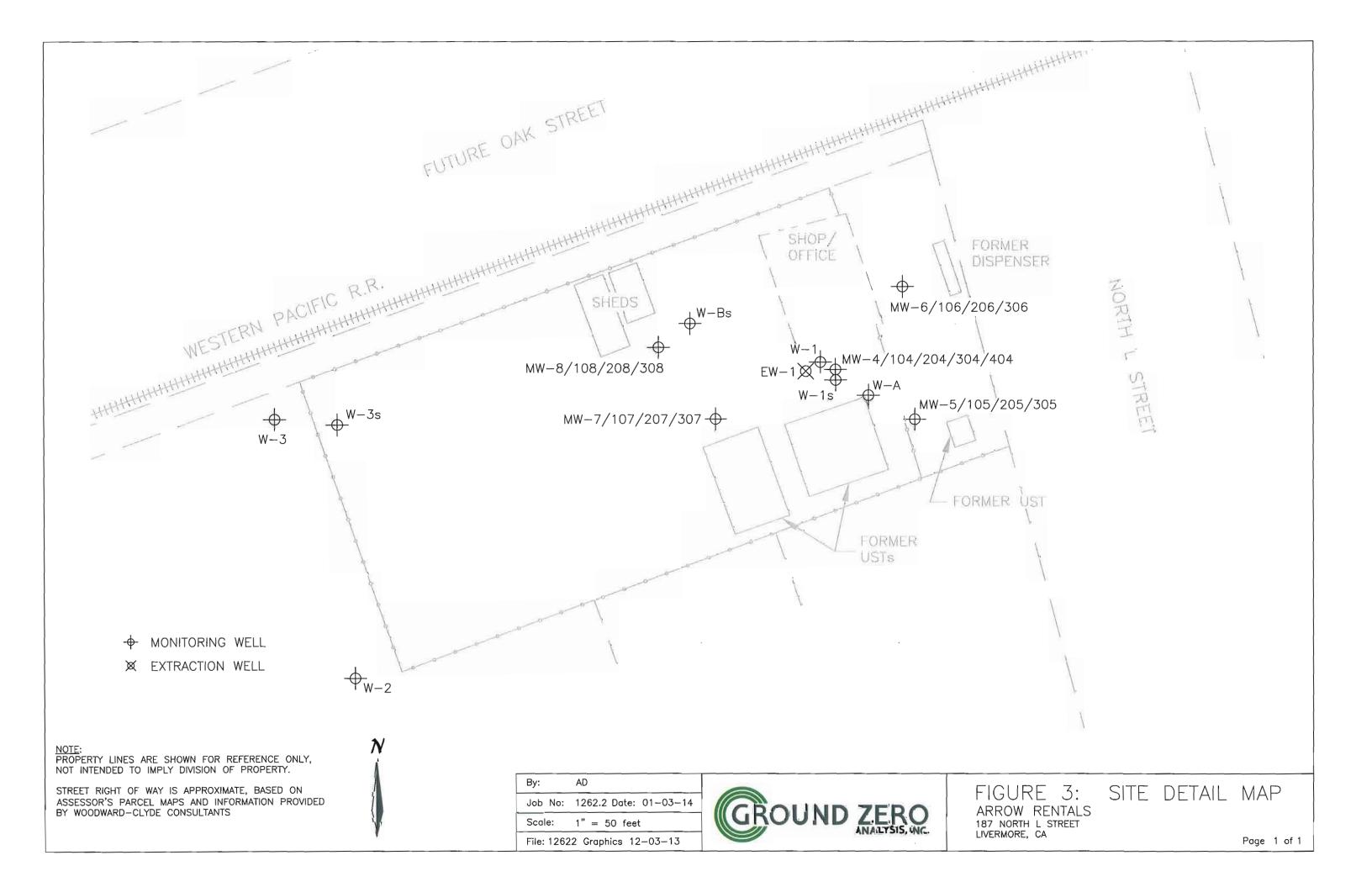
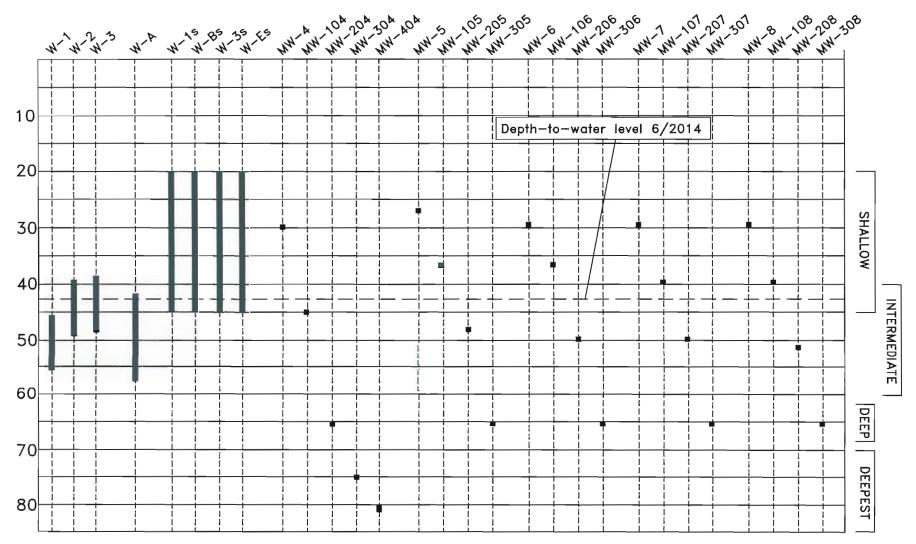
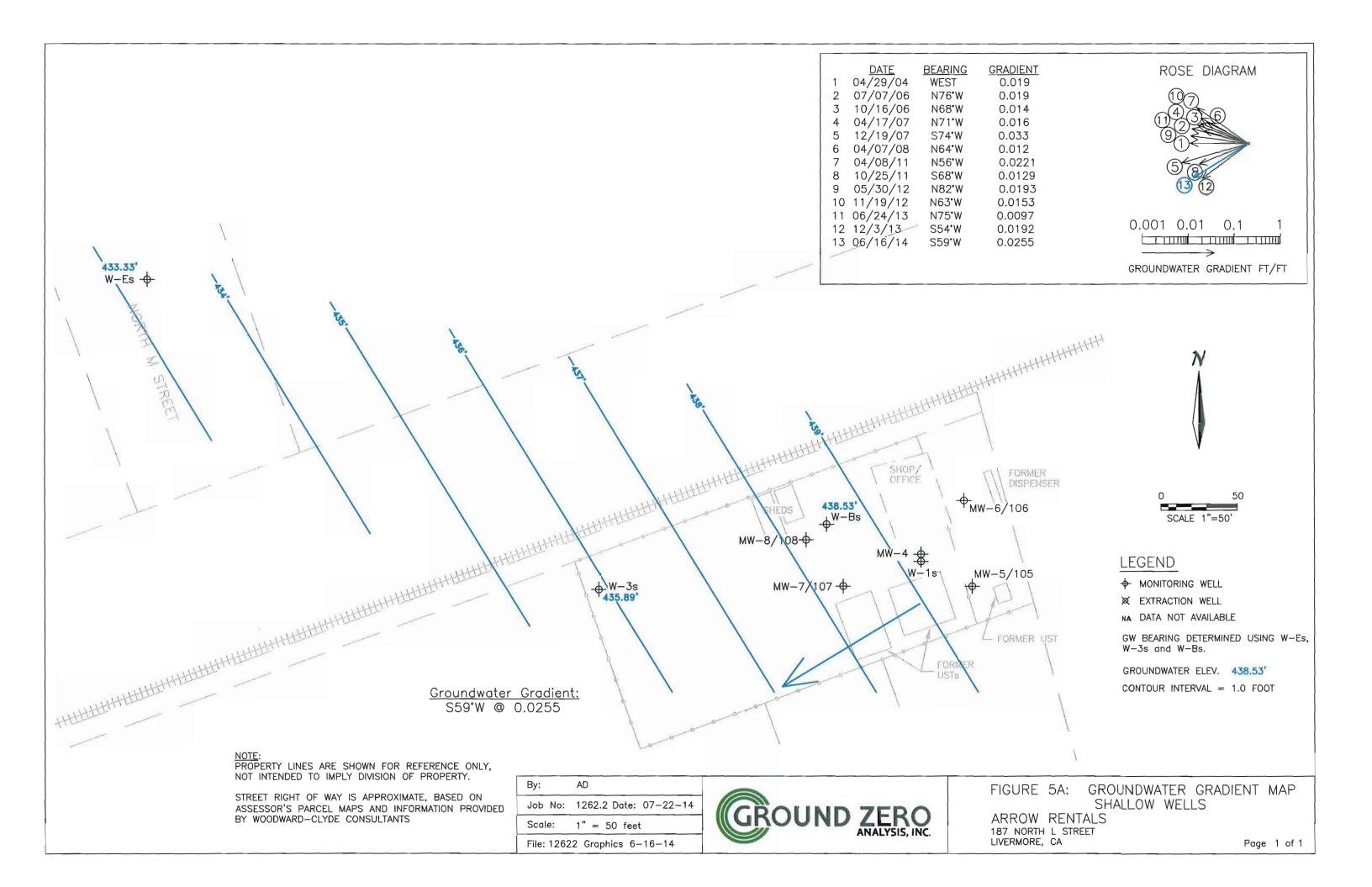
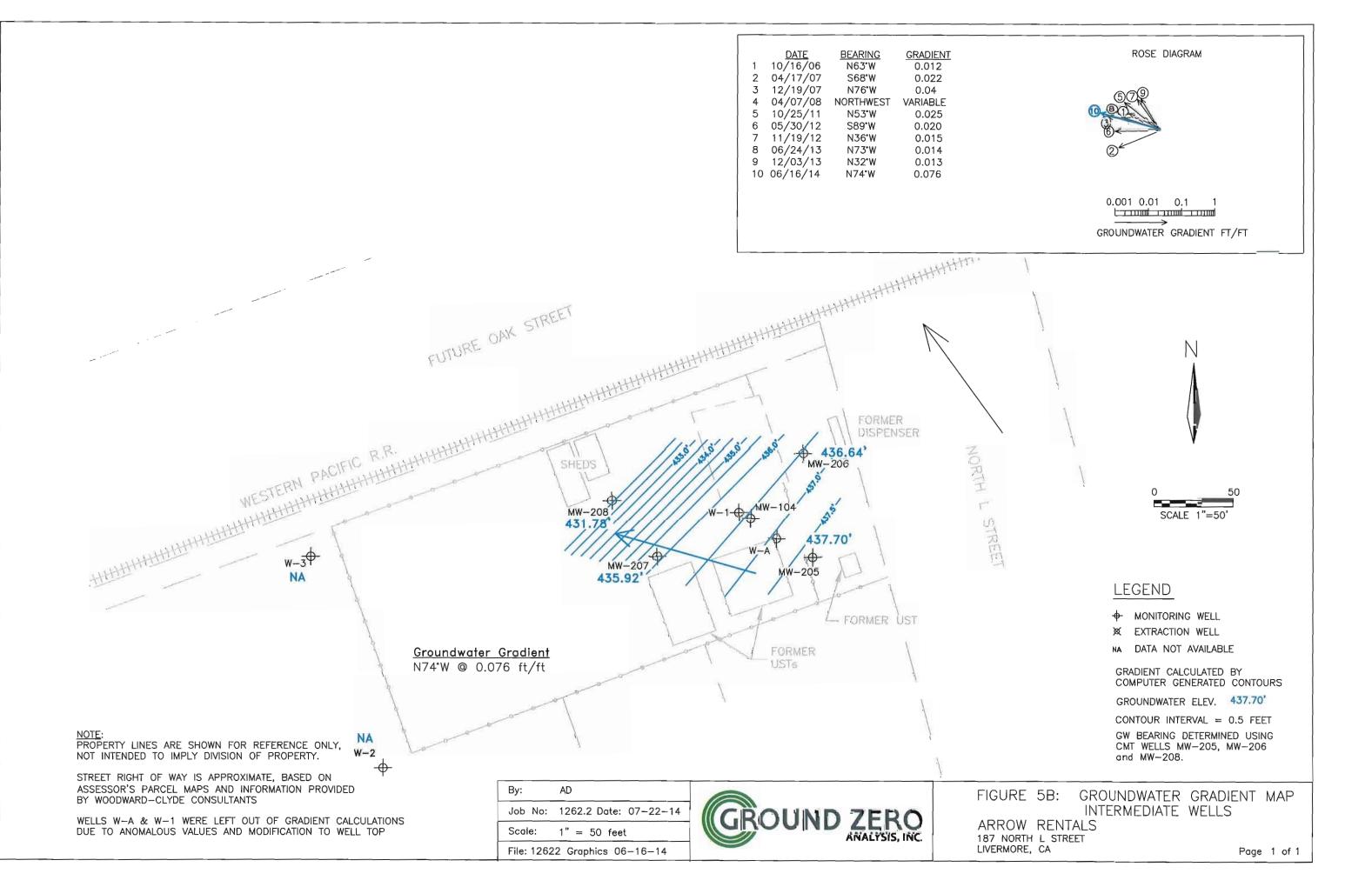


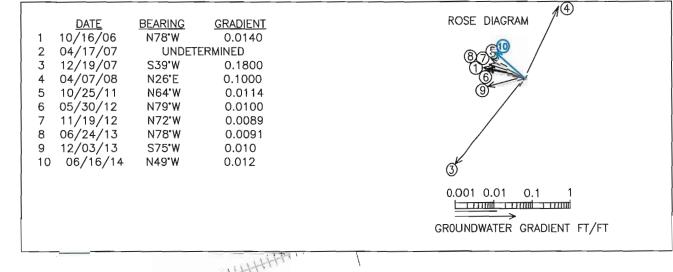
Figure 4: Well Screened Interval Diagram



Sullins 187 North L Street Livermore, CA







WESTERN PACIFIC R.R. SCALE 1"=50' LEGEND MONITORING WELL FORMER UST EXTRACTION WELL Groundwater Gradient FORMER NA DATA NOT AVAILABLE USTS N49°W @ 0.012 ft/ft GW BEARING DETERMINED USING CMT WELLS MW-305, MW-307 and MW-308. GROUNDWATER ELEV. 436.89' CONTOUR INTERVAL = 0.5 FEET

NOTE:
PROPERTY LINES ARE SHOWN FOR REFERENCE ONLY,
NOT INTENDED TO IMPLY DIVISION OF PROPERTY.

STREET RIGHT OF WAY IS APPROXIMATE, BASED ON ASSESSOR'S PARCEL MAPS AND INFORMATION PROVIDED BY WOODWARD-CLYDE CONSULTANTS

By: AD

Job No: 1262.2 Date: 07-22-14

Scale: 1" = 50 feet

File: 12622 Graphics 06-16-14

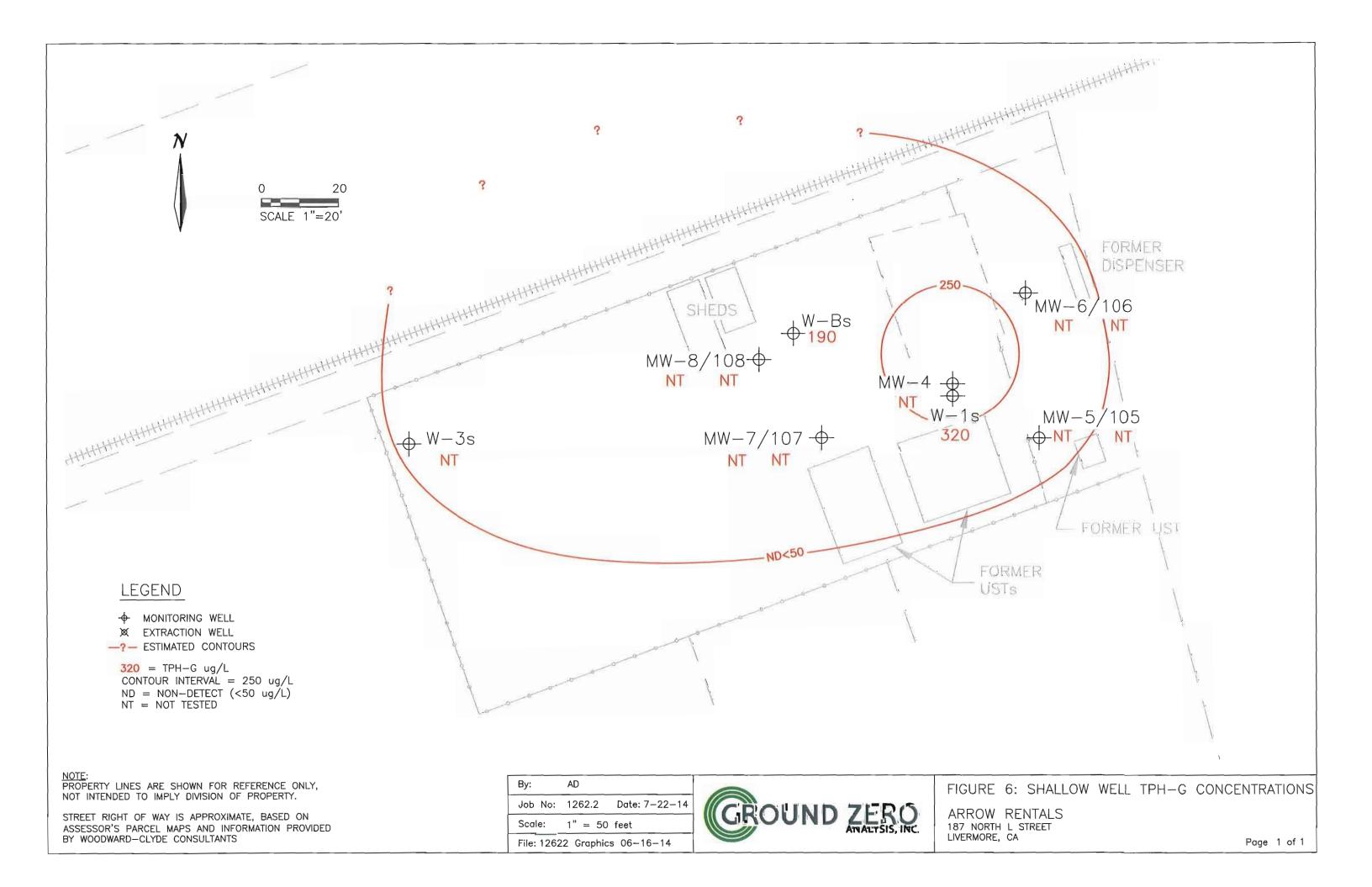


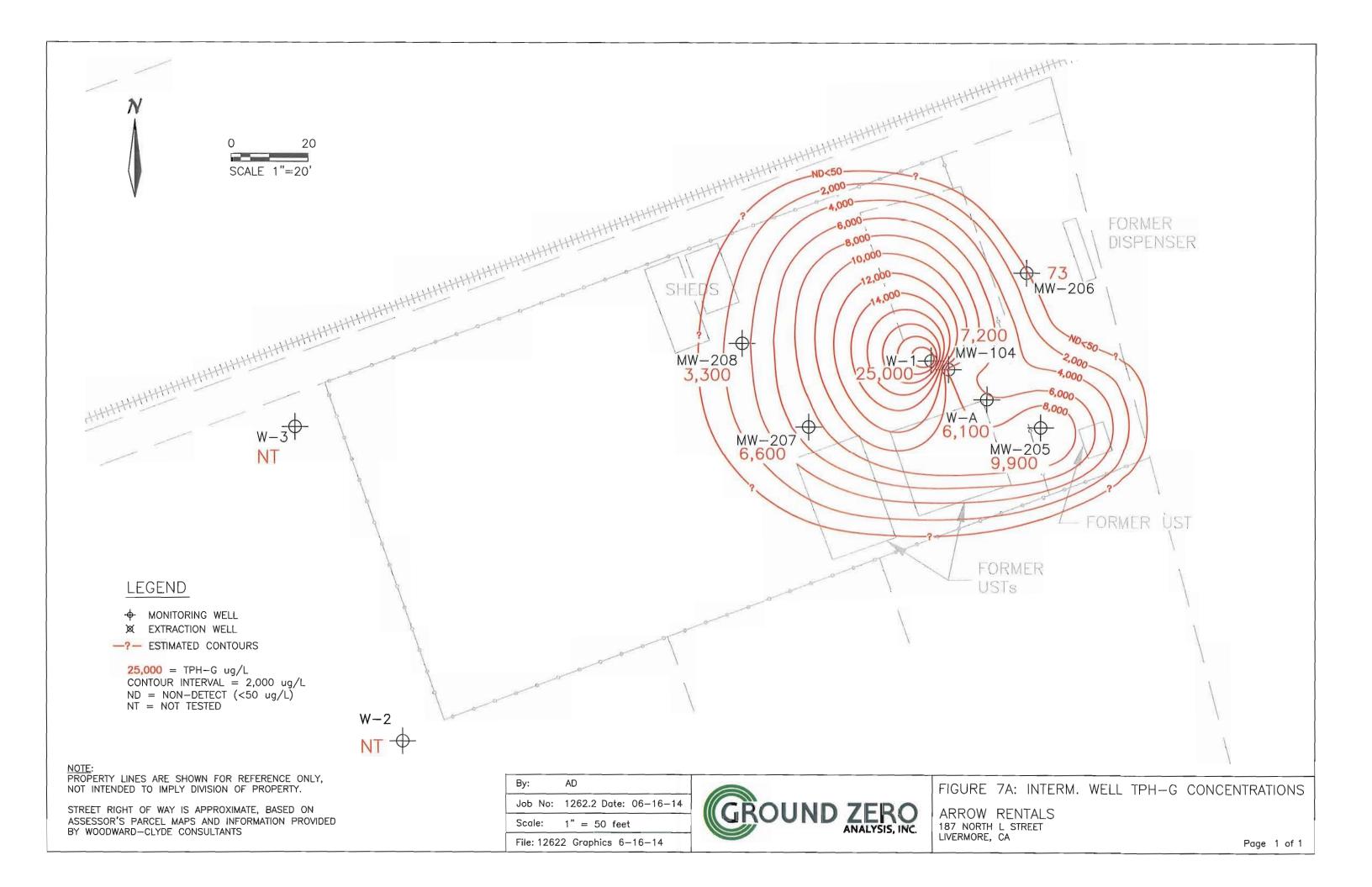
FIGURE 5C: GROUNDWATER GRADIENT MAP
DEEP WELLS

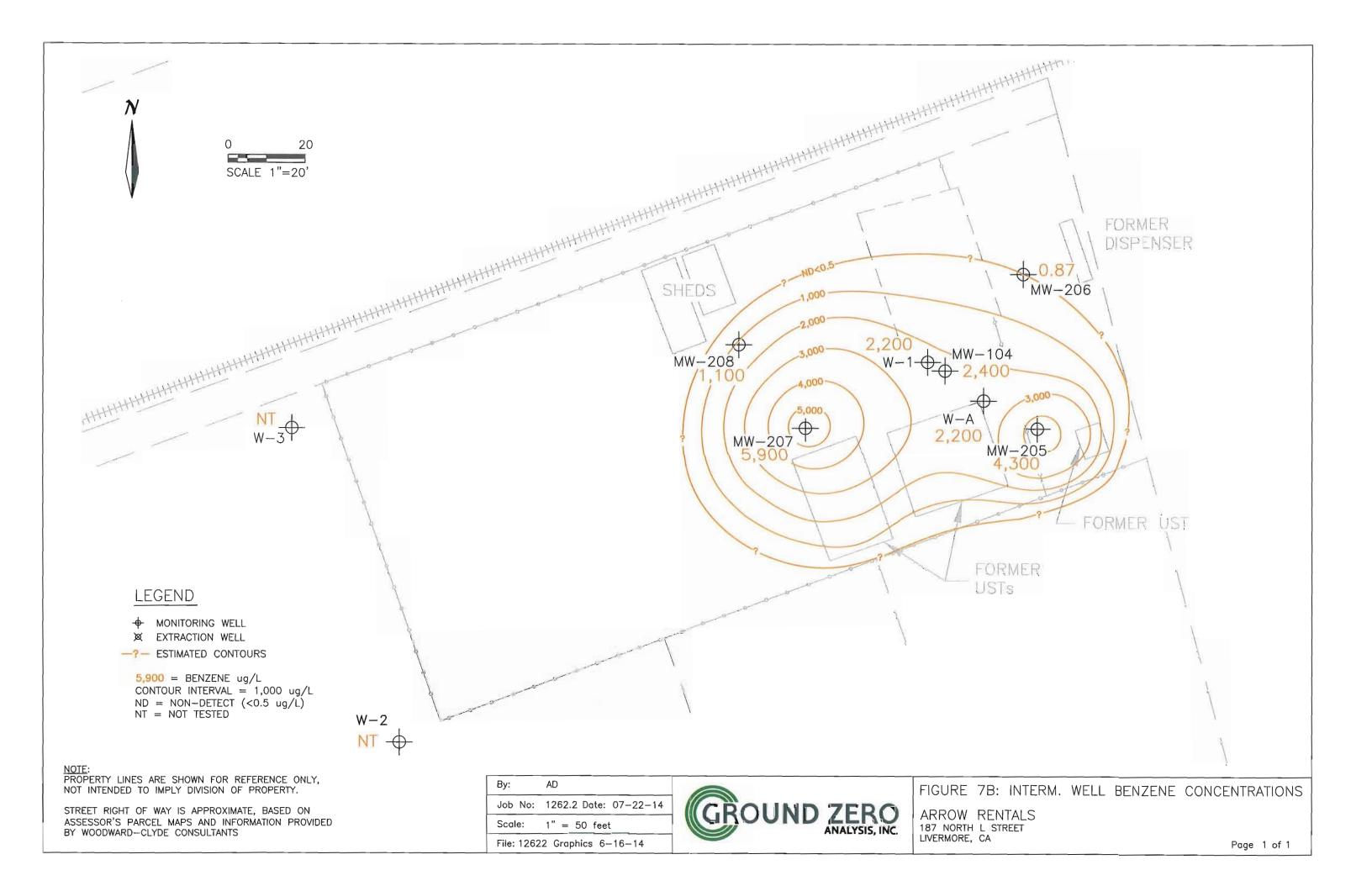
ARROW RENTALS

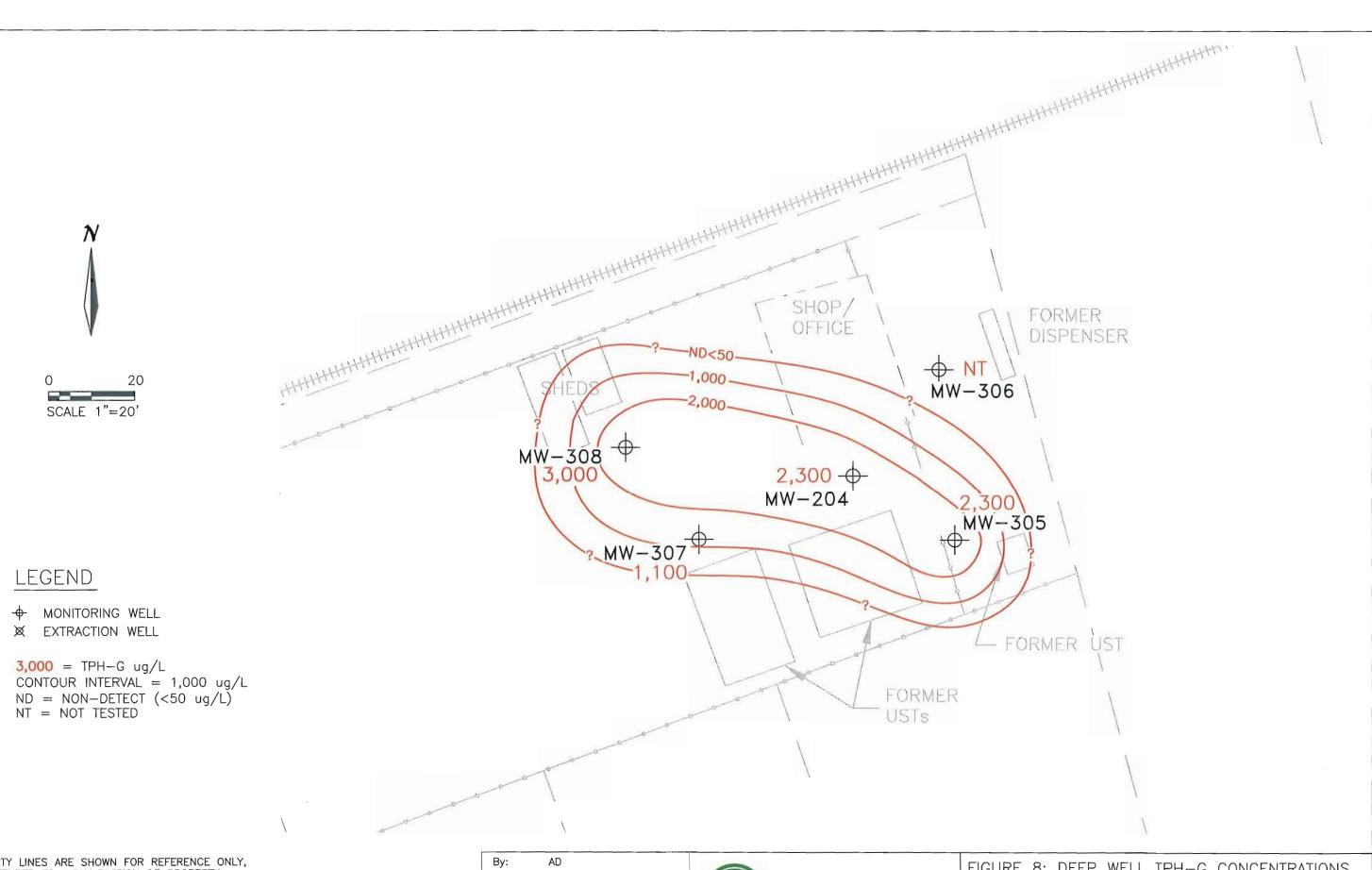
187 NORTH L STREET LIVERMORE, CA

Page 1 of 1









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Scale: 1" = 50 feet

File: 12622 Graphics 6-16-14



FIGURE 8: DEEP WELL TPH-G CONCENTRATIONS

ARROW RENTALS 187 NORTH L STREET LIVERMORE, CA

Page 1 of 1

Figure 9A
Sullins
187 N.L Street
Livermore, CA

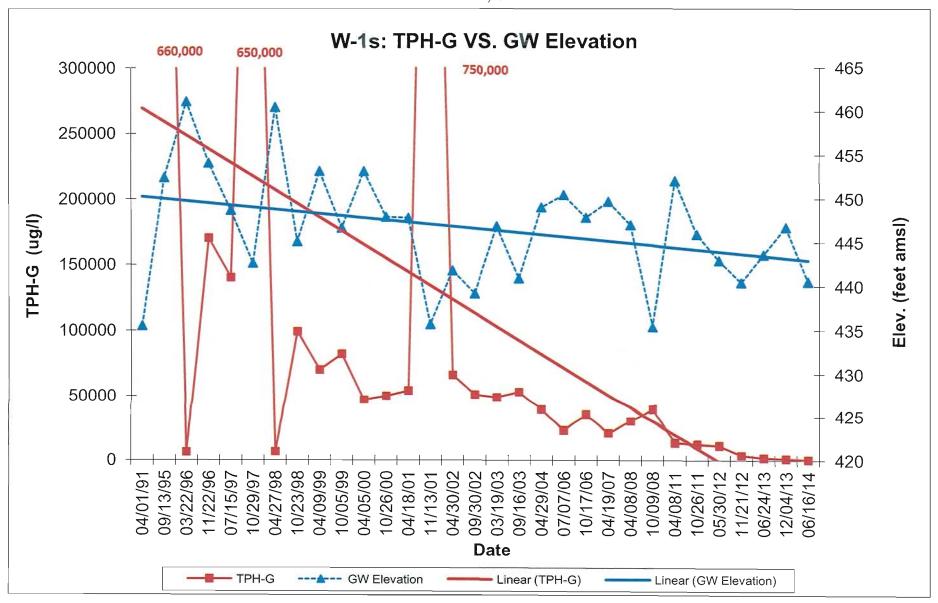


Figure 9B
Sullins
187 N.L Street
Livermore, CA

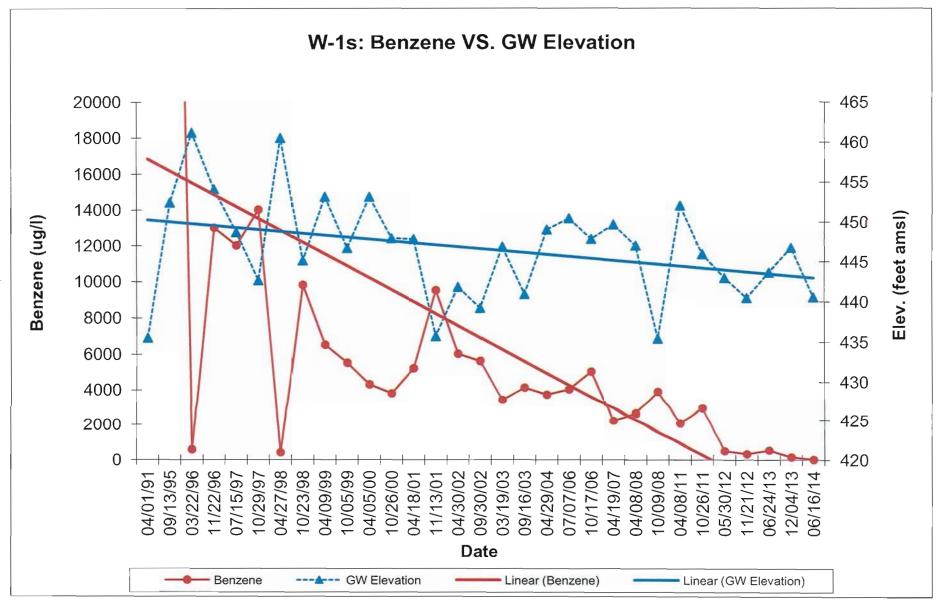


Figure 10A
Sullins
187 N.L Street
Livermore, CA

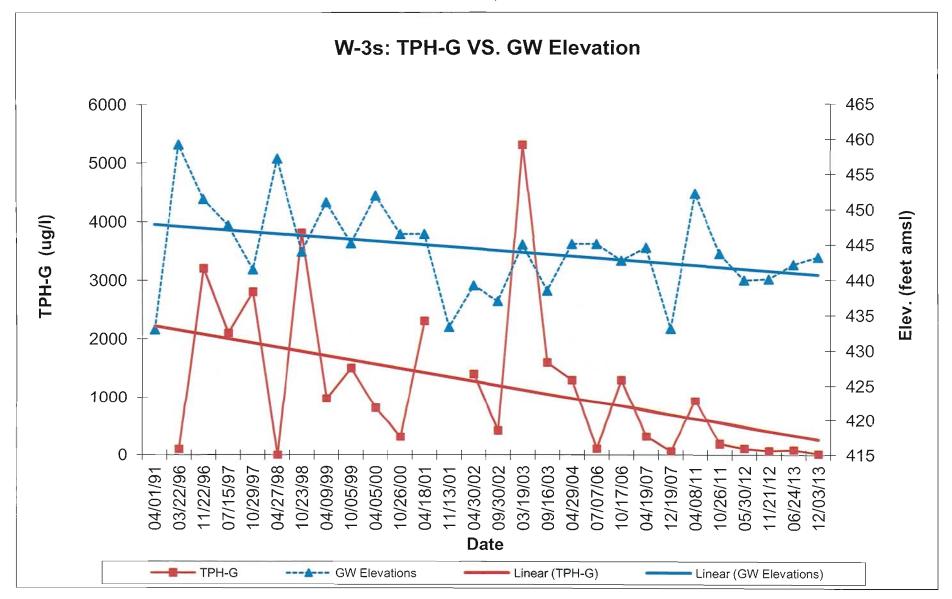


Figure 10B
Sullins
187 N.L Street
Livermore, CA

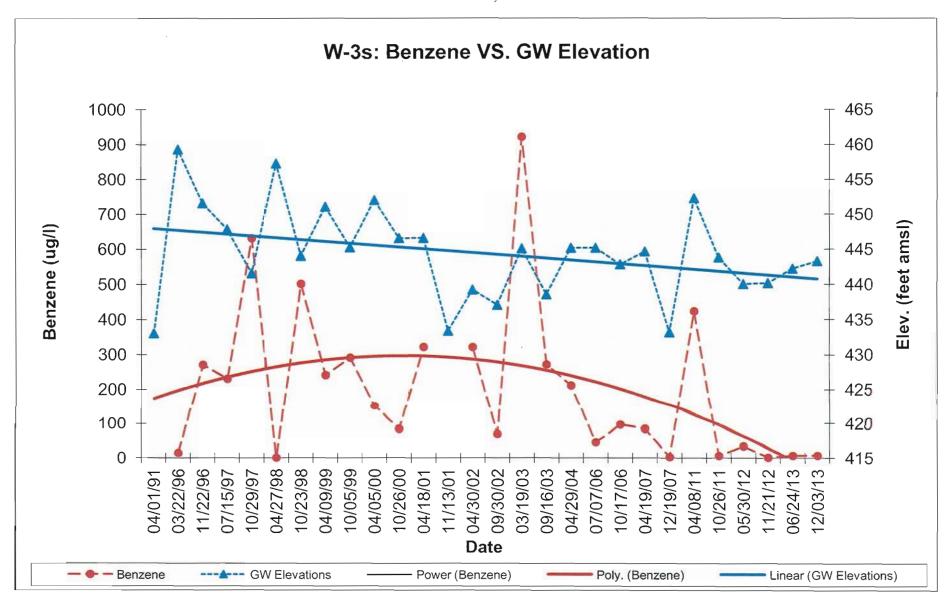


Figure 11A Sullins 187 N.L Street Livermore, CA

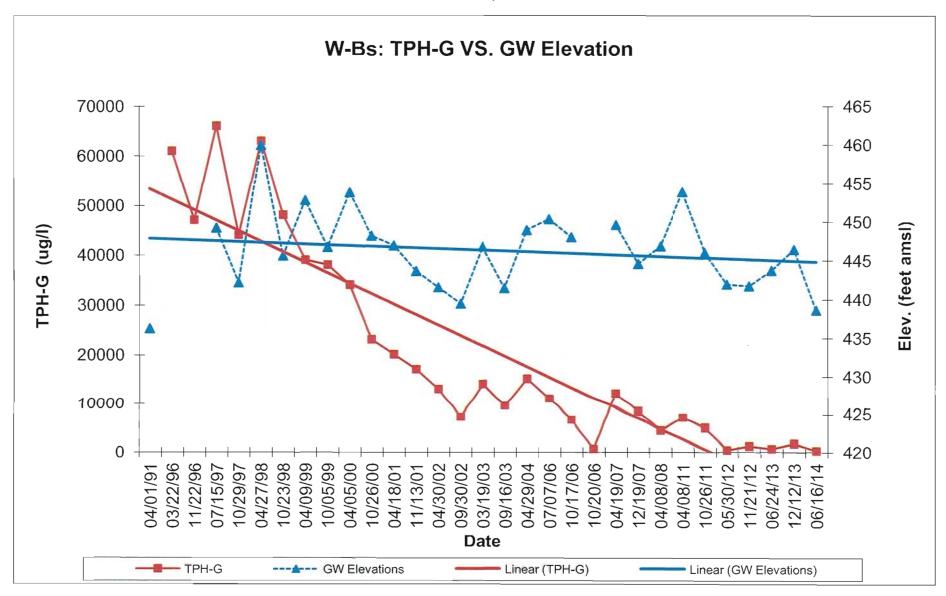
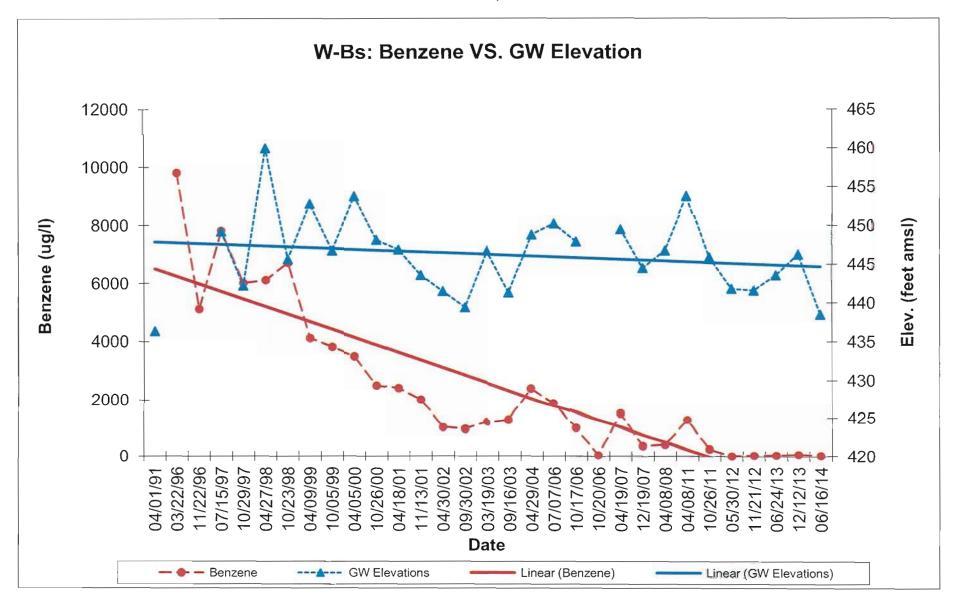
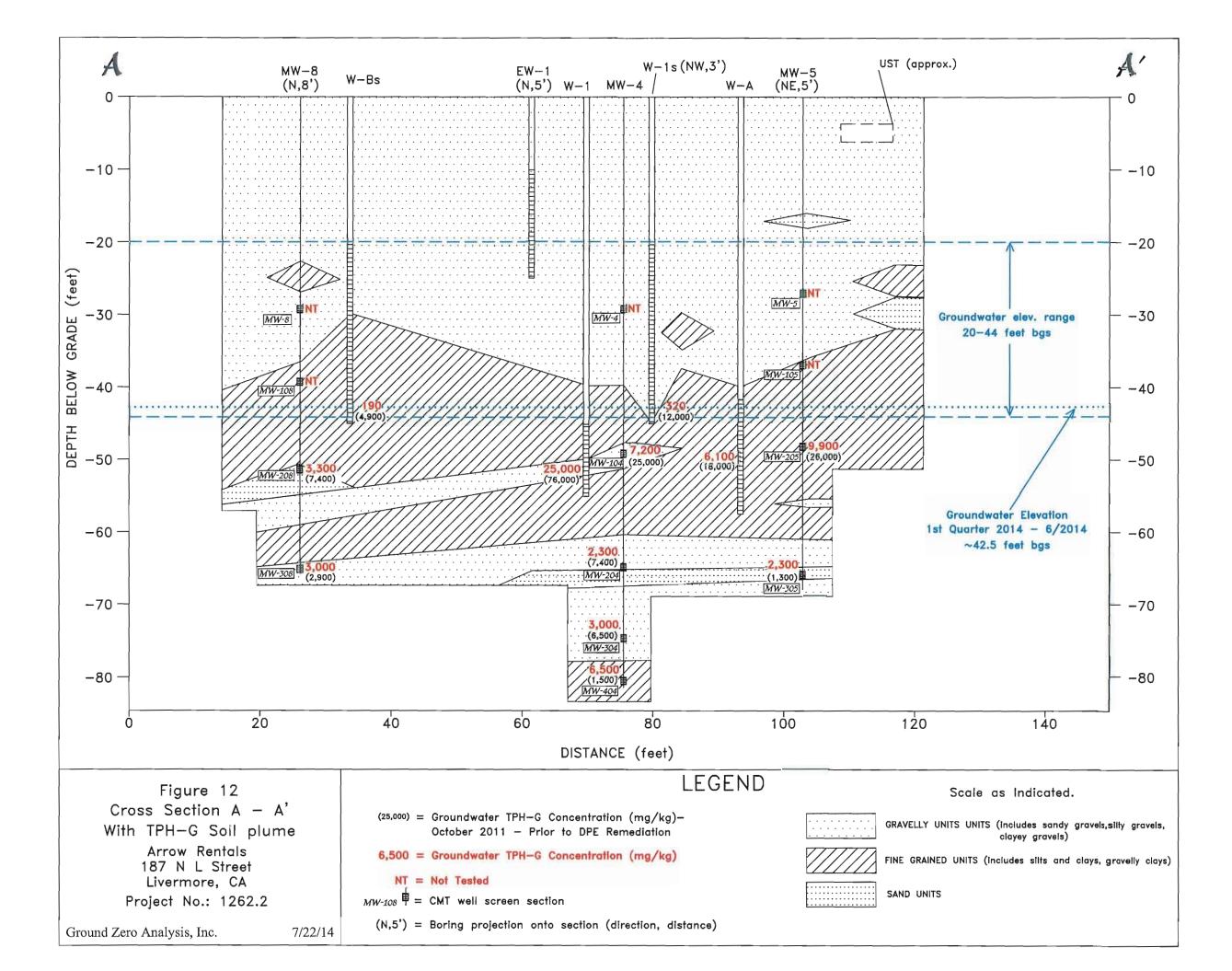


Figure 11B
Sullins
187 N.L Street
Livermore, CA





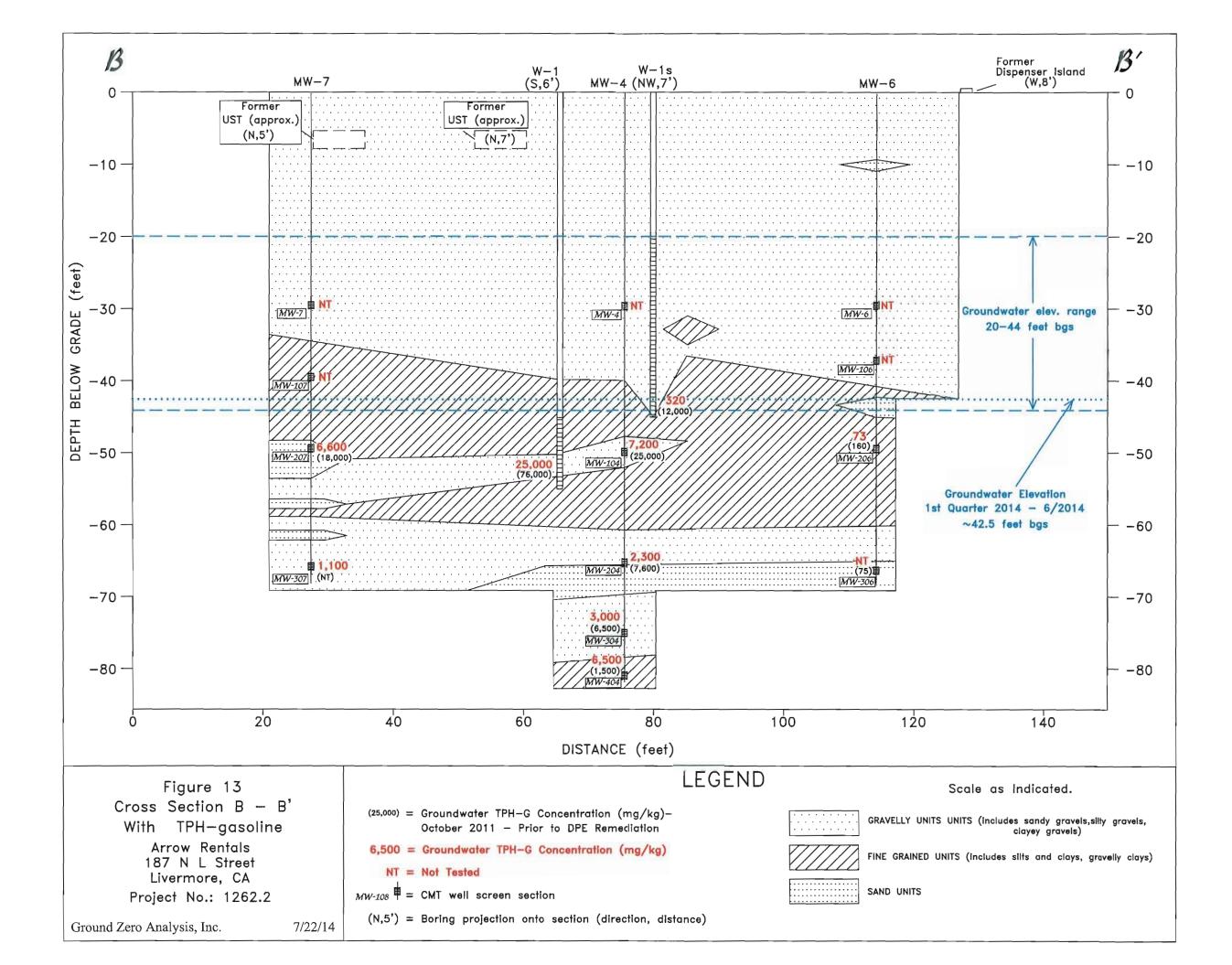
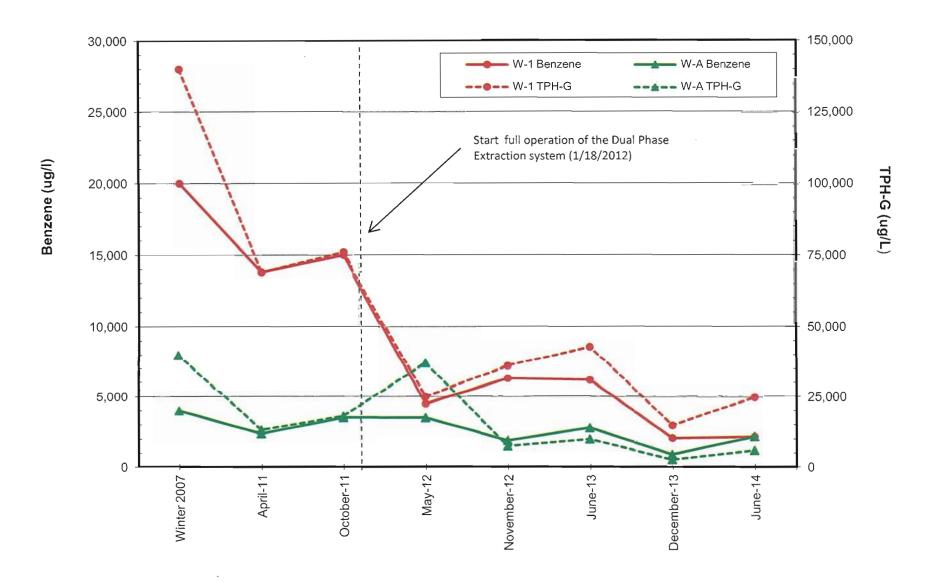


Figure 14
Sullins
187 N.L Street
Livermore, CA

Contaminant Trends in Intermediate Depth Core Wells: W-1 and W-A



Ground Zero Analysis, Inc.

Appendix A

Summary Tables

Date												Elevati	on of Groundwater*						Avg. Elv.	Avg. DTW	Gradient	Bearl
		W-1s	DTW-W-In	W-3s	DTW-W-3u	W-Bs	DTW-W-Eu	W-Es	DTW-W-Es							T			(feet)	(feet)	(ft/ft)	
	top of casing	479.09		476.98		478.82		474.66											 			T
	top of screen	459.09	20	456.98	20	458.82	20	454.66	20													
	bottom of screen	434.09	45	431.98	45	433.82	45	429.66	45													_
6/2/1989		435.93		432.48		-		-											434.21	43.83		
7/25/1990				-		434.20		431.58											432.89	43.85		
1/1/1992																			-	41.00		
4/24/1996		461.14		459.28		460.77		456.21											459.35	18.04		1-
1/22/1996		454.09		451.53		453.12		446.66											451.35	26.04		
7/15/1997		448.68		447.81		449.20		443.20											447.22	30.17		1
10/29/1997		442.64	36.45	441.53		442.19		437.98											441.09	36.30		\top
4/27/1998		460.48	18.61	457.25		459.96		455.39											458.27	19.12		
0/23/1998		445.11	33.98	444.01		445.60		440.16											443.72	33.67		\top
4/9/1999		453.14	25.95	451.02		452.78		447.25											451.05	26.34		1
10/5/1999		446.66	32.43	445.20		446.72		441.47											445.01	32.38		1-
4/5/2000		453.12	25.97	451.96		453.77		448.04											451,72	25.67		
10/26/2000		447.91	31.18	446.50		448.14		442.43		_									446.25	31.14		
4/18/2001		447.80	31.29	446.51		446.89		442.63											445.96	31.43		
11/13/2001		435.69	43.40	433.32		443.59		431.05											435.91	41.48		
2/15/2002		442.46		-		-	.0.1	-											442.46	34.93		
3/15/2002		441.32		-	-	-		-											441.32	36.07		
4/16/2002		441.79		-		-		-											441.79	35.60		1-
4/30/2002		441.80	37.29	439.19		441.50		437.09											439.90	37.49		+
9/30/2002		439.17	39.92	437.01		439.39		434.50											437.52	39.87		
3/19/2003		446.83	32.26	445.03		446.74		441.80											445.10	32.29		\top
9/16/2003		440.88		438.50		441.40		436.14											439.23	38.16		\top
1/29/2004		448.99	30.10	447.39	29.59	448.83	29.99	443.43	31.23										447.16	30.23	0.019	1
7/7/2006		450.40	28.69	448.61	28.37	450.25	28,57	444.21	30.45										448.37	29.02	0.019	N7

Date												Elevation of C	Groundwater	- Wells Surve	yed October 16	5, 2006 in acco	rdance with S	WRCB Geotr	acker Requir	ements											
		W-1s **	DTW-W-Le	W-3s	DTW-W-3a	W-Bs	DTW-W-Es	W-Es	DTW-W-Fa	MW-4	DTW-MW-4	MW-5	DTW-MW-5	MW-6	DIW-MW-6	MW-7	DTW-MW-7	MW-8	prw.ww.s	MW-105	DIWMW-101	MW-106	DLM-WM-100	MW-107	DTW-MW-107	MW-108	MW-108	Avg. Elv.	Avg. DTW	Gradient	Bearing
	top of casing	481.19		479.12		480.92		476.78		480.84		481.12		480.79		480.91		480.64		481.12		480.79		480.91		480.64		(feet)	(feet)	(ft/ft)	
	top of screen	461.19	20	459.12	20	460.92	20	456.78	20	451.84	29	455.12	26	451.79	29	451.91	29	451.64	29	445.12	36	444.79	36	441.91	39	441.64	39				
	bottom of screen	436.19	45	434.12	45	435.92	45	431.78	45	450.84	30	454.12	27	450.79	30	450.91	30	450.64	30	444.12	37	443.79	37	440.91	40	440.64	40				
10/16/2006		447.81	33.38	446.17	32.95	447.93	32.99	442.75	34.03	-			vi	-	~	-	-	-		447.97	33.15	447.11	33.68	446.77	34.14	446.34	3430	446.61	33.58	0.014	N68°W
4/17/2007		449.64	31.55	448.35	30.77	449.51	31,41	444.58	32.20	454.09	26,75	-	-	-	-			-	· #	-	-	-	-9	448.92	31,99	-		448.20	31.58	0.016	N71°W
12/19/2007		438.88	42.31	437.46	41.66	444.51	36.41	433.10	43.68	-	+		-	-	-	-	-		-	-		443.07	37.72	442.26	38,65	442.60	38.04	440.27	39.78	0.033	S74°W
4/7/2008		446.97	34.22	-		446.76	34.16	442.34	34.44	453.30	27.54	-	-	445.99	34.80		-	452.15	28.49	447.38	33.74	445.18	35.61	445.86	35,05	446.36	34.28	447.23	33.23	0.012	N64°W
10/8-9/2008		435.40	43.69	-	in the second	-	-	431.01	43.65		*:			-	1 =	-	-		-	431.68	49.44	431.31	49.48	-	-	430.56	50.08	431.99	47.27	010.0	N57°W
4/8/2011		452.00	27.09	452.20	26.92	453.81	27.11	446.59	28.07			-	-	-	- 22	-		-				-	-			-	-	451.15	27.30	0.0221	N56°W
10/26/2011		445.90	35.29	443.72	35.40	445.92	35.00	441.13	35.65	-		-	-	-	3.5	-	9	-	-	445.57	35.55	446.15	34.64	444.99	35.92	444.59	36.05	445.26	35.41	0.0129	S68°W
** 5/30/2012		442.92	38.27	439.98	39.14	441.85	39.07	437.10	39.68	-	-	-	-	-		-	-			445.63	35.49	443.61	37.18	442,15	38,76			441.89	38.23	0.0129	N82°W
** 11/19/2012		440.42	40.77	440.12	39.00	441.63	39.29	434.44	42.34			-		-	12	-			-	-	-	-		-	20	-		439.15	40.35	0.0153	N63°W
** 6/242013		443.59	37.60	442.17	36.95	443.60	37.32	439.46	37.32	-		-	ž.	-	14.	-	-	-	-	445.69	35.43	444.72	36.07	443.81	37.10	443.35	37.29	443.30	36.89	0.0097	N75°W
** 12/3/2013		446.72	34.47	443.22	35.90	446.29	34.63	440.70	36.08		18	-	-	-		-		-	-	446.29	34.83	446.08	34.71	444.86	36.05	444,47	36.17	444.83	35.36	0.0192	S54°W
** 6/16/14		440.52	40.67	435.89	43.23	438.53	42.39	433.33	43.45	-		-	i.	-		-	-	-	-	-		-	-	-	-	-		437.07	42.44	0.0255	S59°W

6.23

[&]quot;-" = well dry or depth to water measurement could not be obtained
Starting 10/26/11 - Gradient calculated using a 3-point problem with monitoring wells W-Bs, W-Es and W-3s. - The well top of W-1s was modified for the DPE system.

** = The well top of W-1s was modified for the DPE system, therefore the depth-to-water data is irrevelant and was not used for groundwater contour or avg. groundwater elevation calculations

Date										Elevation of 0	Groundwater -	- Wells Survey	yed Octpber	6, 2006 in acco	rdance with S	WRCB Geoti	racker Requir	rements				_					
		W-1**	DTW-W-1	W-A**	DTW-W-A	W-B	DTW-W-B	W-C	DTW-W-C	W-D	DTW-W-D	W-E	DTW-W-E	MW-104	DTW-MW-104	MW-205	DTW-MW-205	MW-206	DTW-MW-206-	MW-207	DTW-MW-207	MW-208	DTW-MW-208	Avg. Elv.	Avg. DTW	Gradient	Bearing
	top of casing	480.77		481.04		480.74		481.61		477.03		476.56		480.84		481.12		480.79		480.91		480.64		(feet)	(feet)	(ft/ft)	
	top of screen	435.27	45.5	439.04	42	440.74	40	436.61	45	435.03	42	436.06	40.5	431.34	49.5	434,12	47	431.79	49	431.91	49	429.64	51	,,,,	(-2-7)	(2007)	
	bottom of screen	425.27	55.5	423.54	57.5	425.74	55	426.61	55	419.53	57.5	416.26	60.3	430.34	50.5	433.12	48	430.79	50	430.91	50	428.64	52				
10/16/2006		-		-	-				-		-	442.63	33.93	444.85	35.99	446.75	34.37	447.03	33.76	446,27	34.64	445.12	35.52	445.44	34.70	0.012	N63°W
4/17/2007		-		-	-	-	*	-	-	-			14	-	*	-	-1	448.57	32.22	447.13	33,78	447.05	33.59	447.58	33.20	0.022	S68°W
12/19/2007		-		438.36	42.68	-		-	,,	-	-	-	-	435.98	44.86	-	- 4	436.10	44.69	434.33	46.58	433.92	46.72	435.74	45.11	0.04	N76°W
4/7/2008		-		446.72	34.32	-	*	-	-	-	-		-	443.10	37.74	444.84	36.28	446.38	34,41	444.84	36,07	443.66	36.98	444.92	35.97	northwest	variable
10/8-9/2008					LE				Wells Destroy	ed on 4/18/200	8			431.08	49.76	434.51	46.61	431.32	49.47	-	-	430.68	49.96	431.90	48.95	0.12	N20°W
4/8/2011		-	78	453.38	27.66	-	-	-		-	-	-		-	8	-		-	-	-		-	. 7	453.38	27.66	N/A	N/A
10/26/2011		445.28	35.49	445.60	35.44	-		-		-	,,	-		444.83	36.01	444.00	37.12	443.25	37.54	442.79	38.12	442.05	38.59	443.75	37.14	0.025	N52°W
** 5/30/2012		441.21	39.56	441.50	39.54	-	-	-		-	-	-		441.78	39.06	442.43	38.69	441.39	39.40	440.37	40,54	440.05	40.59	441.25	39.63	0.020	S89°W
** 11/19/2012		439.12	41.65	438.12	42.92	-	*	-	-	-	-	-	4	439.29	41.55	439.08	42.04	438.11	42.68	437.70	43.21	437.35	43.29	438.40	42.48	0.015	N36°W
** 6/24/2013		443.53	37.24	444.19	36.85	-	÷	-	-	-	-	-	~	443.76	37.08	444.33	36.79	443.74	37.05	442.74	38.17	442.47	38.17	443.54	37.34	0.014	N73°W
** 12/3/2013		444.43	36.34	445.11	35.93	-			-	-		-	+	444.54	36.30	445.13	35.99	444.74	36.05	444.77	36.14	444.37	36.27	444.73	36.15	0.013	N32°W
** 6/16/14		436.71	44.06	436.97	44.07	-		-	-	-		-		437.15	43,69	437.70	43.42	436.64	44.15	435.92	44.99	431.78	48.86	436.12	44.75	0.076	N74°W

[&]quot;-" = well dry or depth to water measurement could not be obtained
Starting 10/26/11 - Gradient calculated using a 3-point problem with CMT wells 205, 206 & 208

** = The well tops of W-A and W-1 were modified for the DPE system, therefore the depth-to-water data is irrevelant and was not used for groundwater contour or avg. groundwater elevation calculations

Date						Elevation of	Groundwater	- Wells Surve	yed October 16	i, 2006 in acco	rdance with S	WRCB Geotr	acker Requirer	nents			_		
						DEEP	WELLS						GROUNI	OWATER			DEEPEST	T WELLS	
		MW-204	DTW-MW-204	MW-305	DTW-MW-365	MW-306	DTW-MW-306	MW-307	DTW-MW-307	MW-308	27TW-MW-308	Avg. Elv.	Avg. DTW	Gradient	Bearing	MW-304	DTW-MW-304	MW-404	DTW-MW-404
	top of casing	480.84		481.12		480.79		480.91		480.64		(feet)	(feet)	(ft/ft)		480.84		480.84	
	top of screen	415.34	65.5	416.12	65	415.79	65	415.91	65	415.64	65					406.34	74.5	400.84	80.0
	bottom of screen	414.34	66.5	415.12	66	414.79	66	414.91	66	414.64	66					405.34	75.5	399.34	81.5
10/16/2006		447.09	33.75	447,44	33.68	447.29	33.50	446.63	34.28	446,37	34.27	446.96	33.90	0.014	N78°W	442.76	38.08	444.37	36.47
4/17/2007		-		448.49	32.63	449.08	31.71	-	-			448.79	32.17		-	-	1	448.82	32.02
12/19/2007		435.73	45.11			443.19	37.60	435.20	45.71	434.93	45,71	437.26	43.53	0.18	\$39°W	435.45	45.39	435.51	45.33
4/7/2008		446.42	34.42	446.56	34.56	442.68	38.11	446.86	34.05	445.59	35.05	445.62	35.24	0.1	N26°E	441.42	39.42	446.18	34.66
10/8-9/2008		429.90	50.94	444.51	36.61	432.28	48.51	-		442.09	38.55	437.20	43.65				*	432.20	48,64
4/8/2011		-	. +7.	-	-	-	+-	-	-		-	-	-						-
10/26/2011		445.22	35.62	445.74	35.38	445.34	35.45	-	¥	445.55	35.09	445.46	35.39	0.0114	N64°W	445.14	35,70	445.07	35.77
5/30/2012		441.06	39.78	441.37	39.75	440.96	39,83	440.56	40.35	440.24	40.40	440.84	40.02	0.0100	N79°W	440.95	39.89	440.85	39.99
11/19/2012		438.53	42.31	438.84	42.28	438.46	42.33	438.04	42.87	437.72	42.92	438.32	42.54	0.0089	N72°W	438.40	42.44	438.33	42.51
6/24/2013		443.75	37.09	444.05	37.07	443.69	37.10	443.16	37.75	442.87	37.77	443.50	37.36	0.0091	N78°W	443.66	37.18	443.50	37.34
12/3/2013		444.78	36.06	445.01	36.11	444.67	36.12	444.]4	36.77	443.97	36.67	444.51	36.35	0.0100	S75°W	444.66	36.18	444,54	36.30
6/16/2014		436.62	44.22	436.89	44.23	436.57	44.22	436.11	44.80	436.10	44.54	436.46	44.40	0.0120	N49°W	436,51	44,33	436.40	44.44

"" = well dry or depth to water measurement could not be obtained
Starting 10/26/11 - Gradient calculated using a 3-point problem with CMT wells 305, 307 & 308

Table 2: Summary of Vertical Groundwater Gradients Arrow Rentals 187 North L Street Livermore CA Project No. 1262.2 Mid Points GW Elev. Vert Head Vert Dist Vertical Date Well Pair (TS-BS & TS-BS) gwl/ts bs/bs (Head) diff. diff. Gradient 16-Oct-06 MW-104 430.84 431.34 430.34 444.85 2.240 16.00 0.140 MW-204 414.84 415.34 414.34 447.09 MW-205 433.62 434.12 446.75 0.690 18.00 433.12 0.038 16-Oct-06 MW-305 447.44 416.12 415.12 19-Apr-07 MW-107 441.41 441.91 440.91 448.92 -1.790 10.00 -0.179 431.91 430.91 447.13 MW-207 431.41 MW-206 431.29 431.79 430.79 0.510 16.00 0.032 19-Apr-07 MW-306 415.79 414.79 447,44 19-Dec-07 MW-204 414.84 415.34 414.34 435.73 -0.280 9.00 -0.031 MW-304 406.34 405.34 435.45 405.84 19-Dec-07 MW-304 405.84 406.34 405.34 435.45 0.060 0.010 5.75 MW-404 400.84 399.34 19-Dec-07 MW-207 431.41 431.91 430.91 434.33 0.870 16.00 0.054 MW-307 415.41 415.91 414.91 435.20 415.34 -5.000 9.00 -0.556 7-Apr-08 MW-304 405.84 406.34 405.34 441.42 7-Apr-08 MW-205 433.62 434.12 433.12 446.75 1.720 18.00 0.096 MW-305 415.62 416.12 415.12 447.44 MW-206 431.29 431.79 430.79 446.75 -3,700 16.00 -0.231 7-Apr-08 MW-306 447.44 415.29 415,79 414.79 7-Apr-08 MW-207 431.41 431.91 430.91 444.84 2.020 16.00 0.126 MW-307 415.91 414.91 446.86 415.41 8-Oct-08 MW-204 414.84 415.34 414.34 429.90 9.00 N/A MW-304 405.84 406.34 405.34 MW-205 433.62 434.12 433.12 434.51 10.000 18.00 0.556 8-Oct-08 444.51 MW-305 415.62 416.12 415.12 8-Oct-08 MW-206 431.29 431.79 430.79 431.32 0.960 16.00 0.060 414.79 MW-306 415.29 415.79 432.28 8-Oct-08 MW-207 431.41 431.91 430.91 16.00 N/A 414.91 MW-307 415.41 415.91 25-Oct-11 MW-204 414.34 445.22 -0.080 9.00 -0.009 MW-304 405.84 406.34 405.34 445.14 433.12 25-Oct-11 MW-205 433.62 434.12 444.00 1.740 18.00 0.097 MW-305 416.12 415.12 445.74 415.62 25-Oct-11 MW-206 431.29 431.79 430.79 443.25 2.090 16.00 0.131 MW-306 415.29 415.79 414.79 445.34 25-Oct-11 MW-207 431.41 431.91 430.91 442.79 16.00 N/A MW-307 415.41 415.91 414.91 MW-204 414.84 415.34 414.34 441.06 -0.110 -0.012 30-May-12 9.00 MW-304 405.84 406.34 405.34 440.95 433.62 434.12 433.12 442.43 30-May-12 MW-205 -1.060 18.00 -0.059 MW-305 415.62 416.12 415.12 441.37 30-May-12 MW-206 431.29 431.79 430.79 441.39 -0.430 16.00 -0.027 MW-306 415.29 415.79 414.79 440.96 MW-207 30-May-12 431.41 431.91 430.91 440.37 0.190 16.00 0.012 MW-307 415.91 414.91 414.84 414.34 438.53 19-Nov-12 MW-204 415.34 -0.130 9.00 -0.014 MW-304 405.84 405.34 406.34 438.40 19-Nov-12 MW-205 433.62 434.12 433.12 439.08 -0.240 18.00 -0.013 MW-305 415.62 416.12 415.12 438.84 MW-206 438.11 19-Nov-12 431.29 431.79 0.350 16.00 0.022 MW-306 415.79 414.79 438.46 437.70 MW-207 431,41 431.91 430.91 0.340 16.00 0.021 19-Nov-12 MW-307 415.41 415.91 414.91 438.04 24-Jun-13 MW-204 414.84 415.34 414.34 443.75 -0.090 9.00 -0.010 MW-304 405.84 406.34 405.34 443.66 MW-205 434.12 433.12 -0.280 24-Jun-13 18.00 -0.016 MW-305 415.62 416.12 415.12 444.05 24-Jun-13 MW-206 431.29 431.79 430.79 443.74 -0.050 16.00 -0.003 431.41 24-Jun-13 MW-207 431.91 430.91 442.74 0.420 16.00 0.026 MW-307 415.41 415.91 414.91 443.16 3-Dcc-13 MW-204 414.84 415.34 414.34 444.78 -0.013 MW-304 405.84 406.34 405.34 444,66 MW-205 433.62 434.12 433.12 445.13 3-Dec-13 -0.120 18.00 -0.007 MW-305 415.62 416.12 445.01 415.12 431.29 431.79 444.74 3-Dec-13 MW-206 430.79 -0.070 16.00 -0.004 431.41 MW-207 431.91 430.91 444.77 -0.039 3-Dec-13 -0.630 16.00 MW-307 415.41 415.91 414.84 415.34 16-Jun-14 MW-204 414.34 436.62 -0.110 -0.012 9.00 MW-304 405.84 406.34 .405.34 436.51 16-Jun-14 MW-205 433.62 434.12 433.12 437.70 -0.810 18.00 -0.045

Ground Zero Analysis, Inc.

415.12

430.79

414.79

430.91

414.91

436.89

436.64

436.57

435.92

436.11

-0.070

0.190

16.00

16.00

-0.004

0.012

MW-305

MW-206

MW-306

MW-207

MW-307

16-Jun-14

16**-**Jun-14

415.62

431.29

415.29

431.41

415.41

416.12

431.79

415.79

431.91

415.91

Table 3: Summary of Well Construction

	Well/Boring		1	Total Depth	Boring	Well Casing			1	Well	Screen	Filter	r Pack	Annul	ar Seal	Grou	ıt Seal
Well/Boring Type	Number	Status	Date Drilled	(ft)	Diameter (in)	Diameter (in)	Casing Type	Slot Size (in)	Sand Type	From	То	From	То	From	То	From	То
Monitoring	W-1	Active	5/25/1989	56.5	8	2	PVC	0.10.0	#2/12	55.5	45.5	55.5	41.5	41.5	39	39	S
Monitoring	W-2	Active	5/26/1989	51.5	8	2	PVC	0.010	1/2/12	49	39	49	36	36	22.5	22.5	s
Monitoring	W-3	Active	5/26/1989	51.5	8	2	PVC	0.010	#2/12	48	38	48	34.5	34.5	32.5	32.5	S
Monitoring	W-A	Active	7/12/1990	63	12	4	PVC	0.010	#2/12	57.5	42	63	40	40	36.5	36.5	S
Monitoring	W-B	Active	7/13/1990	55	12	4	PVC	0.010	#2/12	55	40	55	32	32	30	30	S
Monitoring	W-C	Active	7/11/1990	55	8	2	PVC	0.010	#2	55	45	55	37.5	37.5	35	35	S
Monitoring	W-D	Active	7/12/1990	57.5	12	4	PVC	0.010	#2/12	57.5	42	57.5	39.5	34	32	32	S
Monitoring	W-E	Active	7/10/1990	61	8	2	PVC	0.010	#2/12	60.3	40.5	61	37	30	29	29	S
					ļ												
Monitoring	MW-1s	Active	3/11/1996	45	?	6	PVC	0.010	#2/12	45	20	45	17	17	15	15	S
Monitoring	MW-Bs	Active	3/12/1996	45	?	6	PVC	0.010	#2/12	45	20	45	18	18	16	16	S
Monitoring	MW-3s	Active	3/12/1996	45	?	4	PVC	0.010	#2/12	45	20	45	18	18	16	16	S
Monitoring	MW-Es	Active	3/13/1996	45	?	2	PVC	0.010	#2/12	45	20	45	18	18	16	16	S
Monitoring	MW-4	Active	10/04/06	82	- 8		MCT	- -	#2/12	30	29	30	20	16	14	14	s
Monitoring	MW-104	Active	-	-			MCT		#2/12	50.5	49.5	52	48		-		Ť
Monitoring	MW-204	Active	-			_	MCT		#2/12	66.5	65.5	68	64				<u> </u>
Monitoring	MW-304	Active		-	<u> </u>		MCT		#2/12	75.5	74.5	76	73		<u> </u>	<u> </u>	-
Monitoring	MW-404	Active	-	-	-	-	MCT	· .	#2/12	81.5	80	81.5	79.5		· ·		-
																	$\overline{}$
Monitoring	MW-5	Active	10/09/06	68	8	-	MCT		#2/12	27	26	29	24	24	21.5	21.5	S
Monitoring	MW-105	Active	-	-	-	-	мст	-	#2/12	37	36	39	34			-	-
Monitoring	MW-205	Active		-	-		мст		#2/12	48	47	50	45		-		
Monitoring	MW-305	Active	-	-	-	-	MCT		#2/12	66	65	68	63	-	-	-	-
Monitoring	MW-6	Active	10/10/06	68	8	-	MCT	-	#2/12	30	29	31	27	27	24	24	s
Monitoring	MW-106	Active		-	<u> </u>	-	MCT	-	#2/12	37	36	39	35	-	-	-	-
Monitoring	MW-206	Active	<u> </u>	-	<u> </u>	-	MCT	-	#2/12	50	49	52	47	<u> </u>	-	-	-
Monitoring	MW-306	Active	-	 	-	-	MCT	-	#2/12	66	65	68	63	<u> </u>		-	<u> </u>
Monitoring	MW-7	Active	10/05/06	69.5	8		мст	- -	1/2/12	30	29	30	20	 	-	6	s
Monitoring	MW-107	Active	-	- 09.3	-	-	MCT	<u> </u>	#2/12	40	39	42	37	-		-	
Monitoring	MW-207	Active		 		- -	MCT	-	#2/12	50	49	52	47	-	 	 	-
Monitoring	MW-307	Active		-		-	MCT	<u> </u>	//2/12	66	65	68	63	<u> </u>			
									T			-	-				
Monitoring	MW-8	Active	10/06/06	66.5	8		мст		#2/12	30	29	30	30	20	18	18	S
Monitoring	MW-108	Active	-	<u> </u>	-	-	MCT		#2/12	40	39	42	37		-	-	-
Monitoring	MW-208	Active	-	-	-	-	мст	· .	#2/12	52	51	54	49	-	-		-
Monitoring	MW-308	Active	-	-	<u> </u>	· ·	мст	-	#2/12	66	65	66	63	-	-	-	-
Vapor Extraction	EW-1	Antico	10/3/2006	25	10	4	PVC	0010	#2/12	26	10	-	-				
v apor extraction	EW-I	Active	10/3/2006	<u> </u>		1 4	PVC	010.0	#2/12	25	10	25	9.5	9.5	7.5	7.5	S

Red= Destroyed in 2008

						Project No	5. 1262.2							
Wells	Date	TPH Gasoline	TPH Diesel	Benzene ug/L	Toluene ug/L	Ethyl Benzene	Total Xylenes	MTBE ug/L	ETBE ug/L	DIPE ug/L	TAME ug/L	TBA ug/L	1,2 DCA ug/L	EDE ug/L
W-1	11/1988 (?)	210,000	ug/L 300,000	29,000	30,000	ug/L 5,400	24,000	_	<u> </u>	_	<u> </u>	_	_	
	9/13/1995 10/19/2006	666,000 77,000	-	65,000 9,700	78,000 11,000	6,400 2,000	36,000 10,000	<12500	-	-		-		-
	10/20/2006 12/20/2007	110,000 140,000		4,600 20,000	7,200 17,000	3,900	11,000 16,000	<2000	-	-	-	-	-	
	4/8/2011 10/26/2011	68,900 76,000	-	13,800 15,000	8,150 6,100	910	11,600	<200	==		-	-	-	Ė
	5/30/2012 11/19/2012 6/26/2013	25,000 36,000 43,000		4,500 6,300 6,200	1,700 1,700	1,900 1,900	1,900 6,200 5,500	190	<u> </u>	-	-			-
	12/5/2013 6/17/2014	15,000 25,000	==	2,100	580 210	440 1,500	1,900	13		-	=	-	-	=
W-2	11/1988 (?)	360	<50	6.7	2.1	0.5	1.3		_					_
	9/13/1995 4/8/2011	90	-	<0.5	<0.5	<0.5	<0.5 well location	<5 unknown			-	-		
W-3	11/1988 (?)	11,000	2,200	290	120	150	140	-0500	-	-		-		·
	9/13/1995 4/7/2011 10/26/2011	27,000 193		5,600 7.8	290 <0.5	0.5	<1 representation of the control of	<2500 <0.5		-	-	-	-	
W-A	1990	10,000	2,400	6,800	5,500	620	3,400			-				
(dup)	1990 10/20/2006	450		6,900	5,600 19	620 21	6,800 33	-	-	-	-	-	-	-
	10/29/2007 4/8/2011	40,000 13,200	-	4,000 2,370	330 128	1,600 439	3,000 523	<100 <20				-	-	-
	10/26/2011 6/7/2012	18,000 37,000	-	3,500 3,500	410 700	970 660	870 1700	-		-	-	-	-	-
	11/21/2012 6/25/2013	7,500 10,000		1,900 2,800	110 370	300 520	1,100	56	-		-	-	-	-
	12/5/2013 6/17/2014	2,800 6,100		930 2,200	54 84	59 170	220 250	7.2					<u> </u>	Ė
W-B	1990	13,000	1,700	22,000	7,900 7,300	2,000 1,800	4,000 3,700	-		-	-	-	-	-
(dup)	1990	21,000	1,600	21,000	7,300	1,800	Abondened Ap	nil 14, 2008						
W-C	1990	<10	<100	<1	<1	<1	<1 Abondened Ap	- ril 14, 2008		-	·		-	Ŀ
W-D	1990	100	<100	1	2	2	1	-	-	-				-
							Abondened Ap	ril 14. 2008						
W-E	1990 9/13/1995	<10 95	<100	<1 4	<1 <0.5	<1 <0.5	<1 <0.5	18	-	-	-	-	-	-
							Abondened Ap							_
W-1s	3/22/1996 11/22/1996	6,400 170,000	-	580 13,000	470 18,000	85 3,500	1,100 18,000	<500 <10000		-	=	-		
	7/15/1997	140,000 650,000	38,000 180,000	12,000	12,000	2,600 7,800	16,000 35,000	<800 <3000		=	-	-	-	\vdash
	4/27/1998 10/23/1998	6,700 99,000	2,200 18,000	9,800	9,400 7,000	77 1,800 1,800	870 11,000 8,900	<30 <600	-	==	-	===	-	-
	4/9/1999 10/5/1999 4/5/2000	70,000 82,000 47,000	24,000 60,000 15,000	5,500 4,300	7,000 4,500 2,300	2,500	14,000 6,100	360 <300 170			-	=	-	
	10/26/2000	50,000 54,000	1,200 6,800	3,800 5,200	1,800	1,700	7,600 7,000	<50 <330		=		-	-	-
	11/13/2001 4/30/2002	750,000 66,000	8,200	9,500 6,000	7,800 2,700	7,200	33,000 11,000	<2000 <1200					-	
	9/30/2002	51,000 49,000	1,200 9,800	5,600 3,400	1,500 880	2,000	9,400 7,300	<1000 <500	-		-	-	-	-
	9/16/2003 4/29/2004	53,000 39,000	24,000 5,900	4,100 3,700	1,200 1,200	1,400 810	6,600 4,700	<1000 <2500		-	-	-	-	-
	7/7/2006 10/17/2006	23,000 35,000	<500 <470	4,000 5,000	710 1,300	1,200 1,500	2,900 3,500	<100	<500	<500	<500	<1000	<50	<50
	10/19/2006 10/20/2006	40,000 32,000	-	6,000 2,100	3,800 2,700	1,300 1,200	4,400 3,600	-			-	-		-
	4/19/2007 10/29/2007	21,000 68,000	-	2,200 19,000	460 830	1,200 2,700	1,800 4,000	<200 <400		-	-		-	-
	4/8/2008 10/9/2008	30,000 39,000	<u>-</u>	2,600 3,900	340 340	1,800 1,400	1,700 2,000	<120 <250	-	-			-	-
	4/8/2011 10/26/2011	13,400 12,000		2,040 2,900	239 280	1,180 520	530	<20		=				-
	5/30/2012	11,000 3,600		490 320	83 47 11	33 8.1	740 180 18	- <10	-	==	-	-	-	-
	6/26/2013 12/4/2013 6/17/2014	1,700 1,100 320		530 140 9	16	7.8	120	7.4	-			-	-	-
W-3s	3/22/1996	100		13	6.9	5.3	14	<5		_	_			_
	11/22/1996 7/15/1997	3,200 2,100	340	270 230	29 7	63 33	100 51	<100 <20	-	-	-		-	-
	10/29/1997 4/27/1998	2,800 <50	750 <50	630 <0.5	31 <0.5	71 <0.5	69 <0.5	<30 <3	-	-		-	-	-
	10/23/1998 4/9/1999	3,800 980	1,000 430	500 240	28	90 37	37	35 <12			-	-		
	10/5/1999 4/5/2000	1,500 810	1,000 320	290 150	9.5	53	9.8 5.7	<6 <5	-		-	=		-
	10/26/2000 4/18/2001	310 2,300	1,600	83 320	3.5 8	16	7	<5 <20	-			-		-
	11/13/2001 4/30/2002	1,400	490	320	5.5	24	5	<25	-		-		==	- :
	3/19/2003 3/19/2003	5,300 5,300	1,500 1,500 1,400	920 920 270	24 24 1.7	140	27 27 <0.5	<25 <25 <5		-			-	
	9/16/2003 4/29/2004 7/7/2006	1,600 1,300 110	400 <500	210	5.1	23	4.5 <0.5	<25 <1	- <5	- <5	- <5	- <10	<0.5	<0.5
	10/17/2006 10/17/2006 4/19/2007	1,300	<50	95	<2 <2.5	2 <2.5	<2 <2.5	<5		-	-	-	-	
	12/19/2007 4/8/2011	69 937	-	1.3	<0.5 <5	<0.5	<1 <10	<2 <5	-	-	-	-:	-	-
	10/25/2011 5/30/2012	190 110	-	5.2 33	0.76 0.51	1.3	2.1 0.5	-	-			-	-	-
	11/19/2012 6/25/2013	71 85		<0.3 6	<0.3 0.82	<0.3 0.36	<0.6 0.75	<1.0		-				-
	12/3/2013 6/17/2014	16	-	6.2	<0.5	<0.5	<1	<0.5		-	-	-		-
W-Bs	3/22/1996	61,000	-	9,800	8,000	2,200	11,000	<5000	-		-			<u> </u>
	11/22/1996 7/15/1997	47,000 66,000	17,000	5,100 7,800	3,100 4,900	1,400 1,900	7,800 10,000 6,400	<2500 <600	-	-		-	-	-
	10/29/1997 4/27/1998 10/23/1998	44,000 63,000 48,000	27,000 17,000 9,600	6,000 6,100 6,700	500 5,400 1,200	1,500 1,900 1,500	6,400 9,100 6,200	<600 <300	-	_==	-	_ <u>:</u> _		-
	4/9/1999 10/5/1999	39,000 38,000	12,000 7,300	4,100 3,800	1,900	1,400	5,600 5,900	<300 <60	-	=	<u> </u>		-	-
	4/5/2000 10/26/2000	34,000 23,000	9,600 650	3,500 2,500	1,200	1,400	4,700 2,600	<150 150	=	=		=		
	4/18/2001 11/13/2001	20,000 17,000	2,500 3,600	2,400 2,000	180	880 1,100	1,800	<20 <150	-	-	-	-		-
	4/30/2002 9/30/2002	13,000 7,100	2,300 1,500	1,000 940	38 28	660 260	360 93	<170 <250	-		-		-	-
	3/19/2003 9/16/2003	14,000 9,400	3,900 1,900	1,200	77 36	820 580	900 160	<120 <150	-	==	-	==	-	-
	4/29/2004 7/7/2006	15,000	3,300 <50	1,900	170 160	1,300 820	950 440	<200 <40	<200	<200	<200	- <400	<20	<20
	10/17/2006 10/20/2006	6,500 630	<47	1,000 39	37 8.5	1.7 900	83 20 620	- <100				-		
	4/19/2007 12/19/2007 4/8/2008	12,000 8,200 4,400		1,500 360 410	<50 15	900 380 460	<100 71	<100 <200 <50	-	===		=	=	-
	4/8/2008 4/8/2011 10/25/2011	6,960 4,900	-	1,280 250	56.2 23	632 230	432 38	<50 <10	-	-	-		-	=
	5/30/2012 11/19/2012	310 1,100	-	7.6 31	0.46 3.9	18 23	3 17	-	-		-	-		-
	6/25/2013 12/12/2013	580 1,600	-	34	2.4	3.9	1.8	6.1	-	-	-	===		-
	6/17/2014	190	<u> </u>	26	1	1	3	<0.5	-		-	-	<u>-</u>	-
	3/22/1996 11/22/1996	<50 280	-	<0.5 24	<0.5 0.6	<0.5 1.8	<0.5 2.2	<5 <5	-	_	-	-		-
W-Es			-	-	-	-	-				•	=	-	-
W-Es	7/15/1997 10/29/1997	-							-					
W-Es	10/29/1997 4/27/1998 10/23/1998	82	69	<0.5	0.8	<0.5	0.8	4		-	-	-	-	_
W-Es	10/29/1997 4/27/1998	-												-

7/24/2014 Page Ground Zero Analysis, Inc.

Table 4: Summary of Groundwater Analytical Data

Arrow Rentals 187 North L Street Livermore CA Project No. 1262.2

						Project No	o. 1262.2							
Wells	Date	TPH Gasoline	TPH Diesel	Benzene ug/L	Toluene ug/L	Ethyl Benzene	Total Xylenes	MTBE ug/L	ETBE ug/L	DIPE ug/L	TAME ug/L	TBA ug/L	1,2 DCA ug/L	ED ug/
	4/18/2001	ug/L	ug/L -	-	-	ug/L	ug/L_						-	-
	11/13/2001 4/30/2002	-		-		-	-		_ :			=		-
-	9/30/2002 3/19/2003	86	61	<0.5	<0.5	<0.5	<0.5	<5	-	-	-	-	-	 -
	4/17/2007 4/29/2004	- 55	87	0.62	<0.5	<0.5	<0.5	- <5		<u> </u>	-	-		-
	7/7/2006 10/17/2006	<25 <50	<50 <50	<0.5 <0.5	<0.5 <0.5	<0.5	<0.5 <0.5	2.4	<5	<5	<5	<10	<0.5	<0
=	4/17/2007	<50	-	< 0.5	<0.5	<0.5	<0.5	<1				-	-	
	12/19/2007 4/7/2008	<50 <50	-	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<1 <1	<2 <5			<u> </u>	<u> </u>	<u> </u>	<u> </u>
	10/8/2008 4/8/2011	<50 <50		<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<1	<5 0.5	-		-	-:-	<u> </u>	+ :
	10/26/2011			-		-	<1	0.84	-	-	-	-	-	
	5/29/2012 11/19/2012	<50		<0.5	<0.5	<0.5	-		<u>:</u>			-:		
-	6/25/2013 12/3/2013	<50	-	<0.3	<0.3	<0.3	<0.6	1 -			-	-	 	-
	6/17/2014		-		-		-			-	-	· .		
MW-4	10/16/2006						DR'							
	4/17/2007 10/29/2007	460,000		24,000	21,000	3,800	19,000	<500				<u> </u>		L.
-+	12/19/2007 4/8/2011						DR'							_
_	10/26/2011 5/30/2012			=		-	-:-		-	-	 -	H :-		-
	11/19/2012						DR'	Ý.						
	6/25/2013 12/3/2013						DR'	Υ						
	6/17/2014						DR	Y						
MW-5	10/16/2006 4/19/2007						DR'							
	12/19/2007						DR'	Y						_
	4/8/2011 10/26/2011						DR'	Υ						
	5/30/2012 11/19/2012						DR'							
	6/25/2013						DR'	Y						
	12/3/2013 6/17/2014						DR'							
MW-6	10/16/2006						DR							
\dashv	4/17/2007 12/19/2007						DR'	Υ						_
=	4/8/2011	220	-	3.2	<0.5	<0.5	<1 DR	<0.5	<u> </u>			Ŀ		
	10/26/2011 5/30/2012						DR	Y						
	11/19/2012 6/25/2013						DR'	Υ						_
\dashv	12/3/2013 6/17/2014						DR'	Y						
MAY 7														
MW-7	10/16/2006 4/17/2007						DR'	Υ						_
$\overline{}$	12/19/2007 4/8/2011						DR'							
=	10/26/2011 5/30/2012						DR'	Y						
	11/19/2012						DR'	Υ						
	6/25/2013 12/3/2013						DR'	Y						
	6/17/2014						DR'	Υ						
MW-8	10/16/2006						DR'							
	4/17/2007 12/19/2007						DR'	Y						_
-	4/8/2011 10/26/2011	765		119	<2	3.0	6.0 DR	Y <2		-	-			
\neg	5/30/2012 11/19/2012						DR'	Υ						
	6/25/2013						DR'	Y						
	12/3/2013 6/17/2014						DR'							
W-104	10/19/2006	960		250	170	20	83	-			T . —			
	4/18/2007 10/29/2007	1,300		210	82	110	380 DR'	Y <5					-	_
	12/19/2007						DR'	Ý						
	4/8/2008	32,000 18,500		7,100 13,700	1,400 212	680 266	1,800 384	<250 250		<u> </u>		-:-		
-	10/26/2011 5/30/2012	25,000 18,000	- :- -	8,400 4,200	120 280	490 490	740 1,300	<10	-	<u> </u>	-	-	-	-
	11/19/2012 6/25/2013	12,000 15,000		6,100 6,600	280 160	310 490	530 490	32 120		-	-		<u> </u>	
	12/5/2013	6,000		840	100	150	350	20	-	-	· ·	-	-	+ :
	6/17/2014	7,200	<u>-</u>	2,400	76	320	510	30		<u> </u>				
W-105	10/16/2006 4/19/2007	13,000	-	4,300	980	490	1,500	<250	<u> </u>		-	<u> </u>	-	+ -:
	12/19/2007						DR'	Ý						=
	4/8/2008 10/9/2008	11,000		3,800	70	40	110	<50	-		-			L
	4/8/2011 10/26/2011	11,300		5,870	135	518	1,110	<40	-	· ·	-	-		-
\neg	5/30/2012						DR'	Ý _						_
$=$ \downarrow	6/25/2013						DR'	Υ						
	12/3/2013 6/17/2014						DR:							
W-106	10/16/2006	56		2.2	<0.5	0.57	<0.5	<u> </u>				_ ·		
	4/19/2007 10/29/2007	240 86	-	7.6 <0.5	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<1			-		-	
	12/20/2007	54	-	1.0	<0.5	<0.5	<1 DR	<2	-	-	-	_ :-	<u> </u>	
	10/8/2008	90		0.6	<0.5	<0.5	<1	<5		-	-	_ ·	· ·	Γ.
	4/14/2009 4/8/2011	247	-	9.3	<0.5	<0.5	<1	<0.5	==	-	-	=		
	10/26/2011 5/30/2012	190	-	1.7	<0.3	<0.3	<0.6				<u> </u>	-		<u> </u>
	11/19/2012						DR'	Υ						_
	12/3/2013						DR	Υ						
	6/17/2014						DR							_
W-107	10/19/2006 4/19/2007	320 7,400	-	430 3,400	290 150	33 140	140 140	<200	-	-		-	-	-
	12/19/2007	18,000		6,100	700	380	DR'		-	-			-	_
		20,400		15,100	<200	360	<400	<200		·			-	
	4/8/2008			6,400	28	140	200 DR				<u> </u>	<u> </u>		
	4/8/2011 10/26/2011 5/30/2012	16,000					DR'							
	4/8/2011 10/26/2011 5/30/2012 11/19/2012						DR							
	4/8/2011 10/26/2011 5/30/2012 11/19/2012 6/25/2013 12/3/2013						DR: DR:	Y						
	4/8/2011 10/26/2011 5/30/2012 11/19/2012 6/25/2013 12/3/2013 6/17/2014	16,000		-			DR DR DR	Y						
W-108	4/8/2011 10/26/2011 5/30/2012 11/19/2012 6/25/2013 12/3/2013 6/17/2014 10/16/2006 4/19/2007	3,400 <20.000		790 5,400	46 <200	<20 400	DR DR DR 65 220	Y Y <400		-				
W-108	4/8/2011 10/26/2011 5/30/2012 11/19/2012 6/25/2013 12/3/2013 6/17/2014 10/16/2006 4/19/2007 10/29/2007	3,400					DR DR DR	Y Y <400		-			1 1	
IW-108	4/8/2011 10/26/2011 5/30/2012 11/19/2012 6/25/2013 12/3/2013 6/17/2014 10/16/2006 4/19/2007 10/29/2007 10/29/2007 4/8/2008	3,400 <20,000 310 2,200	-	5,400 55	<200 3.2 24	400 10	DR D	Y Y <400 1.9 Y	-					
IW-108	4/8/2011 10/26/2011 5/30/2012 11/19/2012 6/25/2013 12/3/2013 6/17/2014 10/16/2006 4/19/2007 10/29/2007 4/8/2008 4/8/2011	3,400 <20,000 310 2,200 2,100 4,000	- - - -	5,400 55 1,100 490 1,640	<200 3.2 24 8.4 10.8	400 10 26 35 123	65 220 14 DR 140 40 40	Y Y <400 1.9 Y <25 <12 89.6						
fW-108	4/8/2011 10/26/2011 5/30/2012 11/19/2012 6/25/2013 12/3/2013 6/17/2014 10/16/2006 4/19/2007 10/29/2007 12/19/2007 10/29/2008	3,400 <20,000 310 2,200 2,100		5,400 55 1,100 490	<200 3.2 24 8.4	400 10 26 35	65 220 14 DR	Y Y <400 1.9 Y <25 <12 89.6	=					
W-108	4/8/2011 10/26/2011 5/30/2012 11/19/2012 6/25/2013 12/3/2013 6/17/2014 10/16/2006 4/19/2007 10/29/2007 10/29/2007 4/8/2008 10/9/2008 4/8/2011 10/26/2011 5/30/2012	3,400 <20,000 310 2,200 2,100 4,000	- - - -	5,400 55 1,100 490 1,640	<200 3.2 24 8.4 10.8	400 10 26 35 123	DR D	Y Y < 400						
IW-108	4/8/2011 10/26/2011 5/30/2012 11/19/2012 6/25/2013 6/17/2014 10/16/2006 4/19/2007 12/19/2007 4/8/2008 4/8/2008 4/8/2011 10/26/2011 10/26/2011 10/26/2011 10/26/2011 11/19/2012	3,400 <20,000 310 2,200 2,100 4,000	- - - -	5,400 55 1,100 490 1,640	<200 3.2 24 8.4 10.8	400 10 26 35 123	DR D	Y Y < 4400						
	4/8/2011 10/26/2011 5/30/2012 11/19/2012 6/25/2013 6/17/2014 10/16/2006 4/19/2007 10/29/2007 4/8/2008 10/8/2011 5/30/2012 11/19/2007 12/19/2007 4/8/2011 5/30/2012 11/19/2013 6/17/2014	3,400 <20,000 310 2,200 2,100 4,000		5,400 55 1,100 490 1,640	<200 3.2 24 8.4 10.8	400 10 26 35 123	DR D	Y		-	-			
IW-108	4/8/2011 10/26/2011 5/30/2012 11/19/2012 6/25/2013 12/3/2013 6/17/2014 10/16/2006 10/16/2006 10/16/2006 10/9/2007 12/19/2007 12/19/2007 12/19/2007 10/29/2008 4/8/2011 10/26/2011 5/30/2012 11/19/2012 6/15/2013 12/3/2013 6/17/2014	3,400 <20,000 310 2,200 2,100 4,000	- - - -	5,400 55 1,100 490 1,640	<200 3.2 24 8.4 10.8	400 10 26 35 123	DR D	Y Y < 4400						
	4/8/2011 10/26/2011 5/30/2012 11/19/2012 6/25/2013 12/3/2013 6/17/2014 10/16/2006 4/19/2007 4/8/2008 4/8/2008 4/8/2011 10/26/2011 5/30/2012 11/19/2005 4/8/2013 6/17/2014	3,400 <20,000 310 2,200 2,100 4,000 - 5,800 <10,000 710		5,400 55 1,100 490 1,640 - - 560 2,700 18	<200 3.2 24 8.4 10.8 - 420 650 9.9	400 10 26 35 123 -	DR D	Y Y 4400 1.9 1.9 Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y						
	4/8/2011 10/26/2011 5/30/2012 11/19/2012 6/25/2013 12/3/2013 6/17/2014 10/16/2006 10/16/2006 10/16/2006 10/9/2007 12/19/2007 12/19/2007 12/19/2007 10/29/2008 4/8/2011 10/26/2011 5/30/2012 11/19/2012 6/15/2013 12/3/2013 6/17/2014	3,400 <20,000 310 2,200 2,100 4,000 -		5,400 55 1,100 490 1,640	<200 3.2 24 8.4 10.8 420 650	400 10 26 35 123 -	DR D	Y Y		-				

Table 4: Summary of Groundwater Analytical Data

Arrow Rentals 187 North L Street Livermore CA Project No. 1262.2

Wells	Date	TPH Gasoline	TPH Diesel	Benzene	Toluene ug/L	Ethyl Benzene	Total Xylenes	MTBE	ETBE	DIPE	TAME	TBA	1,2 DCA	EDB
	5/00/0040	ug/L	ug/L	ug/L		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	5/30/2012 11/19/2012	3,800 4,800	-	1,900	88	76 220	170 470	17 <20	-		-:-		<u> </u>	-:
	6/25/2013 12/5/2013	3,500 3,100	-	390	32	120	310 190	<20 3.9	=	-	=	-		<u> </u>
	6/17/2014	2,300		790	37	100	210	0.51		<u> </u>	<u> </u>			· _
MW-205	10/16/2006 10/17/2006	<2000 5,100	-	2,000	63 190	<20 52	54 220	-	- :	=		-		-
	4/18/2007 12/19/2007	<40,000		14,000	550	<400	<400 DRY		<u> </u>		<u>-</u>	<u> </u>		
	4/8/2008 4/8/2011	31,000 33,600	-	20,000	640 232	510 640	1,400 448	<250 <200	-	-	-		-	-
	10/26/2011 5/29/2012	26,000 40,000	-	11,000 15,000	130 150	240 860	1,100	<10	==	-	-			-
	11/21/2012 6/25/2013	5,100 37,000	-	1,700 13,000	26 120	210 900	360 970	<20 57	-		-		-:-	-:
	12/5/2013 6/17/2014	12,000 9,900		3,400 4,300	30 63	270 200	370 120	28 41		-			-:-	-
MW-206	10/16/2006	<50	-	0.72	<0.5	<0.5	<0.5			-				
11111-200	4/18/2007 12/19/2007	<50 84		0.96	<0.5 <0.5	<0.5 <0.5	<0.5	<1 <2				-		=
	4/8/2008	60		1.8	<0.5	<0.5	<1	<5						-
	4/8/2011 10/26/2011	1,170	-	5.7	0.40	<10 0.25	<20 <0.6	<10	:-		-	=		-
	5/29/2012 11/21/2012	1,500 73	-	250 1.4	100 < 0.3	38 <0.3	170 <0.6	<u> </u>	_:_	<u> </u>		<u> </u>		-:-
	6/24/2013 12/4/2013	78 68	<u> </u>	3	0.87 <0.5	0.44 <0.5	0.62 <1	1.8			-	-	-	<u>:</u>
	6/17/2014	73	-	0.87	<0.5	<0.5	<1	1.3						<u> </u>
MW-207	10/19/2006 4/18/2007	1,000 <25,000		9,700	52 480	18 <250	67 250	<500		-	-		-	-
_	12/19/2007 4/7/2008	32,000	-	12,000	350	580	790 DRY	<250			-		-	
	4/8/2011 10/26/2011	19,500 18,000	-	15,000 7,600	<100 38	180 160	<200 280	108	-:-	-		<u> </u>		-
	5/29/2012	24,000 21,000	-	11,000	87 65	310 310	340 190	190						-
	6/24/2013	25,000 13,000	-	12,000	77	300 330	180 210	120		-	<u> </u>	===		-
	6/17/2014	6,600		5,900	53	240	110	84		-				
MW-208	10/17/2006	1,500		520	39	<10	100	*000	-	· ·	<u> </u>			<u> </u>
	4/19/2007 12/19/2007	<10.000	<u> </u>	2,500	<100	<100	<100 DRY			<u> </u>	<u> </u>			
	4/8/2008 4/8/2011	19,000 12,300		3,900 5,820	75 75	550 432	1,200 270	<200 <50		=	-		-	-
	10/26/2011 5/29/2012	7,400 11,000		1,600 2,600	97 42	220	210 170	<10	· ·	<u> </u>				-
	11/21/2012 6/24/2013	11,000 5,000	-	3,500 1,100	37 18	310 34	130 50	39 45		-		-	-	
	12/4/2013 6/17/2014	5,300 3,300	-	540 1,100	15 34	150 77	84 110	17 31	-	-	-	==	-	-
MW-304	10/19/2006	3,300	_	290	240	56	530				· ·		-	-
	4/19/2007 12/20/2007	<10,000 1,500		3,100 380	450 43	<100 32	420 110	<200 <40			-			-
	4/7/2008 4/8/2011	820 2,880		100	36 32.3	36 93.5	98	<5 <5	-	=	-	_ :	_=	
	10/26/2011 5/30/2012	6,500 1,600		1,600	45 13	190	350 100	-	- :	-			-	-
	11/19/2012	5,100		1,600	67_	250	500	-	-	<u> </u>	_:-	<u> </u>	-	_:_
	6/25/2013 12/5/2013	6,100 1,600	-	2,000 270	87 31	94	480 230	<20 <0.5		_:_	-		-	
	6/17/2014	3,000		1,300	96	62	390	9				<u> </u>		
MW-305	10/16/2006 4/19/2007	<50 <20.000		1.8 3,600	<0.5 <200	<0.5 <200	0.67 <200	<400	-	<u> </u>			-	
	12/19/2007 4/8/2008	290	-	42	14	8.1	DRY 28	<5		-			-	
	4/8/2011 10/26/2011	862 1,300	-	193 280	10.4 37	27.6	69.1 49	<5 -	-		-	<u> </u>		-
	5/29/2012 11/21/2012	920 3,700	-	1,300	3.6 17	170	30 230	-:-			-		-	-:-
-	6/25/2013 12/4/2013	1,800 2,700	-	560 1,200	12	41 88	75 240	<20 0.36	-:-		==		-	-:-
	6/17/2014	2,300	-	940	36	130	150_	3.8		-	-		_ ·	
MW-306	10/16/2006 4/18/2007	<50 <50		<0.5 3.1	<0.5 <0.5	<0.5 <0.5	<0.5 <0.5	<1		_ . =	-		-	-
	12/20/2007 4/7/2008	<50 <50	-	0.54	<0.5 <0.5	<0.5	<1 <1	<2 <5			-	<u>:</u>		
	4/8/2011 10/26/2011	<50 75	-	10.4	<0.5	<0.5 <0.3	<1 <0.6	<0.5	<u> </u>	<u> </u>				
	5/30/2012			-										==
	11/21/2012 6/24/2013	44 <50	_:_	0.8	<0.3	<0.3 <0.3	<0.6 0.24	<1		-:-		<u>:</u>	-	-
	12/4/2013 6/17/2014	47	-	<0.5	<0.5	<0.5	<1 	<0.5	-	=	-		<u>-</u> -	
MW-307	10/19/2006	<50	-	2.3	1.5	<0.5	4.7	***	-		- 1	-	· -	
	4/18/2007 12/19/2007	<4000 1,500	-	1,300	250 50	78 59	310 140	<80 <40				<u>:</u>		
	4/7/2008 4/8/2011	2,500 70		720 24.3	110 3.8	69 0.6	160 3.3	<25 <0.5	-				-	
	10/26/2011 5/29/2012	2,000	-	540	4.2	57	110	4.5	-		-		-	-
	11/19/2012 6/24/2013	1,300	-	480	7.2	43	54	- <20	-	-	-			
	12/3/2013 6/17/2014	1,100	-	520	- 8	43	- 28	1.6		-	-	=	-	
MW-308	10/16/2006	<50		<0.5	<0.5	<0.5	<0.5	0	-					
	4/19/2007 12/19/2007	<10.000	-	1,600	<100 1.5	<100 7.2	<100 8.4	<200 <4	-	=		_ :		
	4/7/2008	770 3,240	-	150 1,230	10	48	45 125	<5 <10		-		<u> </u>		
	10/26/2011	2,900 1,200		610	9.2	73	53	-		<u>:</u>			===	
	5/29/2012	4,800	-	930	5.1 46	160	25 210			-				-
	6/24/2013	2,600 3,200	-	610 520	14	110	87 75	<20 0.6			-	_==		==
	6/17/2014	3,000		1,300	20	110	58	9.1	-				-	
MW-404	10/19/2006 4/18/2007	1,700 <10,000	-	120 1,400	73 440	130	280 550	<200	-	-				-
	12/19/2007 4/8/2008	2,200		160	63	92	300 DRY	<40				<u>-</u>	-	
	4/8/2011 10/26/2011	119 1,500	-	90.8	1.4 9.1	1.0	2.6	<0.5		-:-		-	-	<u> </u>
	5/30/2012 11/19/2012	1,200 1,100		260	11 <6.0	34 46	80 84	-	-	<u> </u>				
	6/25/2013	98	-	840 540	22	60	140	<20			= = =		-	
	12/5/2013 6/17/2014	2,500 6,500	-	4,500	100	140 130	240	3.2	-				-	
nre- 2006 da	ita adapted from	n Environmental	Sampling Servi	ices 5/27/04 G	roundwater M	tonitorina Re	port	-						

pre- 2006 data adapted from *Environmental Sampling Services 5/27/0*4 Groundwater Monitoring Report "-" ≈ not analyzed

Ground Zero Analysis, Inc.

Table 5: Summary of Field Parameters

Monitoring Well			W-1s					W-3s					W-Bs					W-Es		
	рН	E.C.	Temp	ORP	DO	pН	E.C.	Temp	ORP	DO	pН	E.C.	Temp	ORP	DO	рΗ	E.C.	Temp	ORP	DO
Date			°C					°C					°C					°C		
7/7/2006	-	-	•	-128.5	0.13	-	•	-	1	0.07	1	-	-	-107.3	0.09	7.05	339	20.9	32.9	0.06
12/29/2007	-	-	,	1	-		-	-		-		-	-	-	-	•	1	-	,	-
4/8/2008	6.76	514	24.8	-95.5	-	-	-	-	-	-	-	-	-	-	0.28	7.07	503	25.1	121.4	6.85
10/8-9/2008	-	-	-	-	-	1		-	,	-	1	-	-		-	1	,	-	,	-
4/7-8/2011	6.17	967	19.1	-221.5	0.37	6.63	964	18.1	40.7	0.72	6.61	780	18.5	-198.2	0.02	7.03	790	19.5	141.3	1.06
10/26/2011	6.65	1012	18.1	-121.5	0.16	6.65	914	17.9	<i>-</i> 57.6	0.52	6.51	722	17.6	-115.8	0.38	,	-	-	,	-
5/30/2012	6.60	1574	21.4	-351.9	0.00	6.89	761	20.3	-66.9	0.11	6.88	676	20.9	-87.3	0.79	,	-	-	-	-
11/19/2012	6.16	1301	18.6	-119.7	0.06	6.75	834	17.2	-65.1	0.19	7.04	825	17.2	-39.2	0.18	,	-	-	-	-
6/24/2013	6.71	1333	21.9	-159.8	0.07	6.43	1243	20.3	-60.2	1.03	6.75	919	21.2	-92.1	0.84	7.09	951	21.8	160.6	0.61
12/3-5/2013	6.73	1086	20.4	-50.0	0.35	6.57	1003	18.4	72.8	1.27	6.86	810	19.4	-53.1	1.19	-		-	-	-
6/17/2014	6.47	1309	21.3	-79.0	0.31	-	-	-	-	_	7.05	803	21.0	-50.1	1.64	-	-	-	-	-

Monitoring Well			W-1					W-3					W-A		
	рΗ	E.C.	Temp	ORP	DO	pН	E.C.	Temp	ORP	DO	pН	E.C.	Temp	ORP	DO
Date			°C					°C					°C		
4/7-8/2011	6.30	917	19.0	-164.3	0.40	6.94	928	18.3	-185.7	0.10	6.85	907	18.9	-254.5	0.04
10/26/2011	6.45	1073	17.8	-60.9	0.20		-	-	-		6.70	1019	18.0	-120.2	0.15
5/30/2012	6.71	1062	20.7	-98.7	0.95	-	-	-		•	6.83	1127	20.3	-90.3	0.15
11/19/2012	7.04	965	17.3	-97.0	0.12	-	-	-	-	-	6.92	1185	18.0	-139.9	0.17
6/24/2013	6.73	1156	20.5	-110.6	0.28	-	-	-	-		6.84	1255	20.5	-124.1	1.85
12/3-5/2013	6.82	1051	20.5	-135.6	0.16	-	-	-	-	-	7.03	1210	20.2	-118.1	0.70
6/17/2014	6.70	1097	21.1	-101.3	0.18						6.42	1352	20.7	-135.0	0.17

[&]quot; - " = insufficient data no result reported

Table 6: TPH-G Mass Removal Calculations: Groundwater

		Hours		GW Re	moved	Lab		Removal	Calculations		Mass Rem	oval Totals
Date/Time	Meter	Cumulative	in period	Cummulative (gallons)	In Period (gallons)	(ug/L)	(grams/L)	(grams/gal.)	(lbs./gal.)	(lbs./period)	cumulative pounds	cumulative gallons
Start-Up	11/15/11 @ 070	0									-	-
12/7/2011	10428.3	0.0	-	0	-	-	-	-		0.00	-	-
12/13/2011	10441.8	13.5	695.1	1060	1060	2400	0.00240	0.00063	0.00000140	0.67	0.67	0.11
1/13/2012	11136.9	708.6	106.9	1378	67	6400	0.00640	0.00169	0.00000373	0.11	0.79	0.13
1/18/2012	11243.8	815.5	11.7	1445	1735	3800	0.00380	0.00100	0.00000221	1.74	2.53	0.41
1/19/2012	11255.5	827.2	585.7	3180	4520	2800	0.00280	0.00074	0.00000163	3.34	5.87	0.95
3/8/2012	11841.2	1412.9	624.6	7700	12173	190	0.00019	0.00005	0.00000011	0.61	6.48	1.05
4/3/2012	12465.8	2037.5	719.8	19873	18435	810	0.00081	0.00021	0.00000047	3.94	10.43	1.70
5/3/2012	13185.6	2757.3	310.6	38308	5546	1000	0.00100	0.00026	0.00000058	1.47	11.89	1.93
5/16/2012	13496.2	3067.9	1.8	43854	139	2800	0.00280	0.00074	0.00000163	0.10	11.99	1.95
6/7/2012	13498.0	3069.7	163.2	43993	2176	5000	0.00500	0.00132	0.00000291	2.87	14.87	2.42
7/9/2012	13661.2	3232.9	707.9	46169	9396	2600	0.00260	0.00069	0.00000151	6.45	21.32	3.47
8/16/2012	14369.1	3940.8	671.4	55565	13607	2300	0.00230	0.00061	0.00000134	8.27	29.59	4.81
9/13/2012	15040.5	4612.2	32.3	69172	1488	1800	0.00180	0.00048	0.00000105	0.71	30.30	4.93
10/16/2012	15072.8	4644.5	459.2	70660	13308	1800	0.00180	0.00048	0.00000105	6.33	36.63	5.96
12/13/2012	15532.0	5103.7	574.6	83968	0	1800	0.00180	0.00048	0.00000105	0.00	36.63	5.96
2/4/2013	16106.6	5678.3	6.5	83968	712	1300	0.00130	0.00034	0.00000076	0.24	36.87	6.00
2/14/2013	16113.1	5684.8	0.8	84680	0	1300	0.00130	0.00034	0.00000076	0.00	36.87	6.00
4/10/2013	16113.9	5685.6	208.0	84680	1373	2000	0.00200	0.00053	0.00000116	0.73	37.59	6.11
4/26/2013	16321.9	5893.6	167.6	86053	757	2000	0.00200	0.00053	0.00000116	0.40	37.99	6.18
5/3/2013	16489.5	6061.2	37.0	86810	2328	1600	0.00160	0.00042	0.00000093	0.98	38.98	6.34
5/16/2013	16526.5	6098.2	58.1	89138	3026	1600	0.00160	0.00042	0.00000093	1,28	40.26	6.55
6/6/2013*	16584.6	6156.3	144.5	92164	4762	2071	0.00207	0.00055	0.00000121	2.61	42.86	6.97
6/26/2013*	16729.1	6300.8	665,7	96926	37081	2071	0.00207	0.00055	0.00000121	20.29	63.15	10.27
7/31/2013*	17394.8	6966.5	530.0	134007	12666	2071	0.00207	0.00055	0.00000121	6.93	70.08	11.40
8/22/2013*	17924.8	7496.5	285.8	146673	23541	2071	0.00207	0.00055	0.00000121	12.88	82,96	13.49
9/3/2013	18210.6	7782.3	412.1	170214	0	1200	0.00120	0.00032	0.00000070	0.00	82.96	13.49
9/27/2013	18622.7	8194.4	334.0	170214	32207	1300	0.00130	0.00034	0.00000076	11.06	94.02	15.29
10/11/2013	18956.7	8528.4	264.1	202421	0	870	0.00087	0.00023	0.00000051	0.00	94.02	15.29
10/22/2013	19220.8	8792.5	363.0	202421	34399	1700	0.00170	0.00045	0.00000099	15.45	109.47	17.80
11/6/2013	19583.8	9155.5	697.0	236820	0	1400	0.00140	0.00037	0.00000082	0.00	109.47	17.80
1/15/2014	20280.8	9852.5	359.0	236820	25360	2600	0.00260	0.00069	0.00000151	17.42	126.89	20.63
1/30/2014	20639.8	10211.5	288.0	262180	0	2500	0.00250	0.00066	0.00000146	0.00	126.89	20.63
2/11/2014	20927.8	10499.5	335.5	262180	5339	1700	0.00170	0.00045	0.00000099	2.40	129.28	21.02
2/25/2014	21263.3	10835.0	3.0	267519	186	1700	0.00170	0.00045	0.00000099	0.08	129.37	21.04
3/18/2014	21266.3	10838.0	335.0	267705	22003	2600	0.00260	0.00069	0.00000151	15.11	144.48	23.49
4/1/2014	21601.3	11173.0	2.5	289708	315	340	0.00034	0.00009	0.00000020	0.03	144.51	23.50
4/15/2014	21603.8	11175.5	310.6	290023	17723	2000	0.00200	0.00053	0.00000116	9.36	153.87	25.02
4/28/2014	21914.4	11486.1	1.6	307746	0	1800	0.00180	0.00048	0.00000105	0.00	153.87	25.02
5/9/2014	21916.0	11487.7	52.0	307746	0	2300	0.00230	0.00061	0.00000134	0.00	153.87	25.02
5/12/2014	21968.0	11539.7	-	307746	-	-	-	-	-	-		-
	tration for this date is		lab data			•		1	Mass Removed 07/11 thru 5/1		153.9	25.0
								Total N	Aass Removed /6/13 thru 5/1	via GW	44.4	7.2

Start-Up 11/15/2011	Wells	Meter	Cumulative	in period	Lab (mg/m3)	PID (ppm)	Air Flow (tfm)	(mg/f13)	(lbs:/f13)	(ibs (min)		(lbs:/perlod)	Mass Rem cumulative lbs.	
	11/15/11 @ 07		Campaine	period	(6/m3)	(ppm)	Kany	(6/113)	(104./113)	(my/mm)	1 (102/1001)	(100,000)		10010
	W-1s & EW-1	10378.5	0	-	- 1					· ·		0		
1/15/2011	W-1s & EW-1	10381.5	27.6	27.6	68197.1	4800	78	1931.11	0.004257	0.3321	19.924	549.9	549.9	89.4
1/16/2011	W-1s & EW-1	10409.1	28.0	0.4	28139.9	2000	125	796.83	0.001757	0.2195	13.175	5.3	555.2	90.3
1/29/2011	W-1s & EW-1	10409.5	46.8	18.8	24706.4	1760	75	699.60	0.001737	0.1157	6.941	130.5	685.7	111.5
	W-15 & EW-1	10428.3		8.9	4234.3		131		0.001342		2.078	18.5	704.2	114.
12/7/2011			55.7		_	329		119.90		0.0346				
2/8/2011	W-1s & EW-1	10437.2	60.3	4.6	2380.0	200	90	67.39	0.000149	0.0134	0.802	3.7	707.9	115.
2/13/2011	W-1s only	10441.8	67.3	7.0	8197.1	606	137	232.11	0.000512	0.0701	4.206	29.4	737.3	119.
2/14/2011	W-1s & W-1	10448.8	435.5	368.2	11816.6	859	100	334.61	0.000738	0.0738	4.426	1629.7	2367.0	384.
2/30/2011	W-1s only	10817.0	579.2	143.7	8182.8	605	96	231.71	0.000511	0.0490	2.942	422.8	2789.8	453.
1/5/2012	W- Is only	10960.7	698.0	118.8	3360.0	262	136	95.14	0.000210	0.0285	1.712	203.3	2993.1	486.
/10/2012	W-1s only	11079.5	755.4	57.4	7939.6	588	161	224.82	0.000496	0.0798	4.788	274.8	3268.0	531.
											_			_
1/13/2012	W-1s only	11136.9	874.0	118.6	11087.0	808	133	313.95	0.000692	0.0921	5.523	655.1	3923.0	637.
1/19/2012	W-15 only	11255.5	1040.2	166.2	12617.7	915	98	357.29	0.000788	0.0772	4.632	769.8	4692.8	763.
1/26/2012	W-1s only	11421.7	1147.8	107.6	3776.5	297	149	105.94	0.000236	0.0351	2.108	226.8	4919.6	799.
1/31/2012	W-1s & W-1	11529.3	1151.0	3.2	3862.4	303	141	109.37	0.000241	0.0349	2.040	6.5	4926.1	801.
hut Down	1/31/2012 @ 15	550 to 2/24/2012 @	1330						A CHARLES					
2/24/2012	W-1s & W-1	11532.5	1459.7	308.7	11845.2	861	84	335.42	0.000739	0.0621	3.727	1150.5	6076.6	988.
3/8/2012	W-1s & W-1	11841.2	1774.7	315.0	3490.0	282	152	98.82	0.000218	0.0331	1.987	625.9	6702.5	1089
3/21/2012	W-1s & W-1	12156.2	2084.3	309.6	2288.7	193	158	64.81	0.000143	0.0226	1.354	419.3	7121.9	1158
					-					_				
4/3/2012	W-1s & W-1	12465.8	2469.3	385.0	2145.6	183	145	60.76	0.000134	0.0194	1.165	448.7	7570.5	1231
1/19/2012	W-1s & W-1	12850.8	2804.1	334.8	2288.7	193	132	64.81	0.000143	0.0189	1.132	378.9	7949.4	1292
5/3/2012	W-1s & W-1	13185.6	3114.7	310.6	915.3	97	130	25.92	0.000057	0.0074	0.446	138.4	8087.8	1315
/16/2012	W-1s & W-1	13496.2	3116.5	1.8	251.0	51.1	99	7.11	0.000016	0.0016	0.093	0.2	8088.0	1315
hut Down		25 to 6/07/2012 @		100015	C DESCRIPTION OF THE PERSON OF	CE WING	THE PLAN	AUTO TO SE	19 THE					
6/7/2012	W-1s & W-1	13498.0	3186.7	70.2	2345.9	197.0	88	66.43	0.000146	0.0129	0.773	54.3	8142.2	1323
/20/2012	W-1s & W-1	13568.2	3278.3	91.6	1687.8	151.0	128	47.79	0.000140	0.0135	0.809	74.1	8216.4	1336
7/5/2012	EW-1 & W-1	13659.8	3279.7	1.4	673.5	80.1	105	19.07	0.000042	0.0044	0.265	0.4	8216.7	1336
														_
7/9/2012	EW-1 & W-1	13661.2	3292.2	12.5	705.0	82.3	93	19.96	0.000044	0.0041	0.246	3.1	8219.8	1336
/18/2012	EW-1 & W-1	13673.7	3602.4	310.2	481.8	66.7	95	13.64	0.000030	0.0029	0.171	53.2	8273.0	1345
//31/2012	EW-1 & W-1	13983.9	3987.6	385.2	6509.0	488.0	85	184.31	0.000406	0.0345	2.072	798.3	9071.3	1475
/16/2012	EW-1 & W-1	14369.1	4346.8	359.2	3032.6	245.0	89	85.87	0.000189	0.0168	1.011	363.1	9434.4	1534
/31/2012	W-1s & EW-1	14728.3	4659.0	312.2	3519.0	279.0	129	99.65	0.000220	0.0283	1.700	530.8	9965.2	1620
/13/2012	W-1s & EW-1		4686.7	27.7	25.5	34.8	121	0.72	0.000002	0.0002	0.012	0.3	9965.6	1620
		15040.5 1900 due to low pre		41.1	20.0	34.0	121	0.72	0.00002	0.0002	0.012	V.3	3303.0	1070
hut Down				4.0	2676.2	220.0	120	75.75	000000	0.0355	1200	5.5	0071 4	400-
0/1/2012	W-1 & W-A	15068.2	4691.3	4.6	2675.0	220.0	120	/3./5	0.000167	0.0200	1.202	2.3	9971.1	1621
hut Down		400 due to low pre		201.5	1005 -	100.0	0.5	20.00	1000000	0.000	0.550	and the parties	101:	Walley Division
0/16/2012	W-1 & W-A	15072.8	5050.8	359.5	1087.0	109.0	98	30.78	0.000068	0.0066	0.397	142.7	10113.8	1644.
0/31/2012	W-1 & W-A	15432.3	5149.7	98.9	2374.5	199.0	108	67.24	0.000148	0.0160	0.961	95.0	10208.8	1660.
hut Down		100 and was left off												
/16/2012*	W-1 & W-A	15531.2	5150.5	0.8	2045.5	176.0	108	57.92	0.000128	0.0138	0.827	0.7	10209.5	1660.
2/13/2012	W-1 & W-A	15532.0		-	521.9	69.5	130	14.78	0.000033	0.0042	-			-
hut Down		1/10/13 due to ma	alfunction of pro-	pane regulat		AN EXCUSE TO SERVICE	Remarks		50,400 pt		Na light	A BUSH	E-MAR ON	
1/10/2013		15532.0	5294.1	1,43.6			-				200			
1/17/2013	W-1s & EW-1	15675.6	5725.1	431.0	311.6	54.8	138.0	8.82	0.000019	0.0027	0.161	69.4	10278.9	1671.
2/4/2013	W-1s & EW-1	16106.6	5731.8	6.7	20.1	23.2	180.0	0.57	0.000001	0.0002	0.014	0.1	10279.0	1671.
2/4/2013	W-15 & EW-1	16113.3	5737.5	5.7	3061.2	247,0	80.0	86.68	0.0000191	0.0153	0.917	5.2	10279.0	1672
		16113.3 10/13 due to liquid					6U.U	80.00	0.000191	0.0153	0.317	3.2	10284.2	16/2.
hut Down							56.0	67.24	0.000148	0.0083	0.400	101.1	1030£ 5	1600
/11/2013	W-1 & W-A	16119.0	5940.4	202.9	2374.5	199.0	56.0	07.24	1 0.000148	0.0083	0.498	101.1	10385.3	1688.
hut Down		a high water alarm i			315.7	49 . 1	141.0	6 11	0.000000	0.0010	0114	10.1	10/01 1	1604
/26/2013	W-1s & EW-1	16321.9	6108.0	167.6	215.7	48.1	141.0	6.11	0.000013	0.0019	0.114	19.1	10404.4	1691
5/3/2013	W-1 & W-A	16489.5	6145.0	37.0	2049.8	176.3	78.0	58.04	0.000128	0.0100	0.599	22.2	10426.5	1695
hut Down		low air pressure ala							T					
/16/2013	W-1 & W-A	16526.5	6203.1	58.1	157.1	44.0	58.0	4.45	0.000010	0.0006	0.034	2.0	10428.5	1695.
hut Down		6/2013 due to bad)							my and					
6/6/2013	W-1 & W-A	16584.6	6347.6	144.5	24.1	30.6	41.0	0.68	0.000002	0.0001	0.004	0.5	10429.0	1695.
77 07 0 0 0 0	6/12/13 thru 6/											THE RESERVE		ETT OF SEL
		26/13 for 2nd Quan			A THE	A. LUCY TO A TANK	STATE OF		1	final C	STORY OF THE			
hut Down	W-1 & W-A			187.0	2331.6	196.0	46.0	66.02	0.000146	0.0067	0.402	75.1	10504.2	1703.
5/26/2013	W-1 & W-A W-1 & W-A	26/13 for 2nd Quan	ter GWM event	187.0 334.5	2331.6 1802.3	196.0 159.0	46.0 42.0	66.02 51.03	0.000146	0.0067	0.402	75.1 94.8	10504.2 10599.0	
5/26/2013 7/11/2013	W-1 & W-A	26/13 for 2nd Quart 16729.1 16916.1	6534.6 6869.1	334.5	1802.3	159.0			0.000113				10599.0	1723.
5/26/2013 7/11/2013 7/25/2013	W-1 & W-A W-1 & W-A	26/13 for 2nd Quan 16729.1 16916.1 17250.6	6534.6 6869.1 7013.3	334.5 144.2	1802.3 1031.2	159.0 105.1	42.0 107.5	51.03 29.20	0.000113 0.000064	0.0047	0.284 0.415	94.8 59.9	10599.0 10658.9	1723. 1733.
hut Down 5/26/2013 7/11/2013 7/25/2013 7/31/2013	W-1 & W-A W-1 & W-A W-1 & W-A	26/13 for 2nd Quan 16729.1 16916.1 17250.6 17394.8	6534.6 6869.1 7013.3 7205.8	334.5 144.2 192.5	1802.3 1031.2 572.0	159.0 105.1 73.0	42.0 107.5 110.0	51.03 29.20 16.20	0.000113 0.000064 0.000036	0.0047 0.0069 0.0039	0.284 0.415 0.236	94.8 59.9 45.4	10599.0 10658.9 10704.2	1723. 1733. 1740.
hut Down 5/26/2013 7/11/2013 7/25/2013 7/31/2013 8/8/2013	W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-1s	26/13 for 2nd Quan 16729.1 16916.1 17250.6 17394.8 17587.3	6534.6 6869.1 7013.3 7205.8 7543.3	334.5 144.2 192.5 337.5	1802.3 1031.2 572.0 119.5	159.0 105.1 73.0 27.3	42.0 107.5 110.0 145.0	51.03 29.20 16.20 3.38	0.000113 0.000064 0.000036 0.000007	0.0047 0.0069 0.0039 0.0011	0.284 0.415 0.236 0.065	94.8 59.9 45.4 21.9	10599.0 10658.9 10704.2 10726.1	1723. 1733. 1740. 1744.
hut Down 5/26/2013 7/11/2013 7/25/2013 7/31/2013 8/8/2013 5/22/2013	W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-1s W-1 & W-A	26/13 for 2nd Quart 16729.1 16916.1 17250.6 17394.8 17587.3 17924.8	6534.6 6869.1 7013.3 7205.8 7543.3 7684.4	334.5 144.2 192.5 337.5 141.1	1802.3 1031.2 572.0 119.5 410.0	159.0 105.1 73.0 27.3 85.4	42.0 107.5 110.0 145.0 73.0	51.03 29.20 16.20 3.38 11.61	0.000113 0.000064 0.000036 0.000007 0.000026	0.0047 0.0069 0.0039 0.0011 0.0019	0.284 0.415 0.236 0.065 0.112	94.8 59.9 45.4 21.9 15.8	10599.0 10658.9 10704.2 10726.1 10742.0	1723. 1733. 1740. 1744. 1746.
hut Down 5/26/2013 7/11/2013 7/25/2013 7/31/2013 8/8/2013 5/22/2013	W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-1s	26/13 for 2nd Quan 16729.1 16916.1 17250.6 17394.8 17587.3	6534.6 6869.1 7013.3 7205.8 7543.3	334.5 144.2 192.5 337.5	1802.3 1031.2 572.0 119.5	159.0 105.1 73.0 27.3	42.0 107.5 110.0 145.0	51.03 29.20 16.20 3.38	0.000113 0.000064 0.000036 0.000007 0.000026 0.000030	0.0047 0.0069 0.0039 0.0011	0.284 0.415 0.236 0.065	94.8 59.9 45.4 21.9	10599.0 10658.9 10704.2 10726.1	1723. 1733. 1740. 1744. 1746.
Shut Down 5/26/2013 7/11/2013 7/25/2013 7/31/2013 8/8/2013 5/22/2013 5/28/2013	W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-1s W-1 & W-A	26/13 for 2nd Quart 16729.1 16916.1 17250.6 17394.8 17587.3 17924.8	6534.6 6869.1 7013.3 7205.8 7543.3 7684.4	334.5 144.2 192.5 337.5 141.1	1802.3 1031.2 572.0 119.5 410.0	159.0 105.1 73.0 27.3 85.4	42.0 107.5 110.0 145.0 73.0	51.03 29.20 16.20 3.38 11.61	0.000113 0.000064 0.000036 0.000007 0.000026	0.0047 0.0069 0.0039 0.0011 0.0019	0.284 0.415 0.236 0.065 0.112	94.8 59.9 45.4 21.9 15.8	10599.0 10658.9 10704.2 10726.1 10742.0	1723. 1733. 1740. 1744. 1746.
shut Down 5/26/2013 7/11/2013 7/25/2013 7/31/2013 8/8/2013 8/22/2013 8/22/2013 9/3/2013	W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-1s W-1 & W-A W-1 & W-A	26/13 for 2nd Quan 16729.1 16916.1 17250.6 17394.8 17587.3 17924.8 18065.9	6534.6 6869.1 7013.3 7205.8 7543.3 7684.4 7829.1	334.5 144.2 192.5 337.5 141.1 144.7	1802.3 1031.2 572.0 119.5 410.0 484.5	159.0 105.1 73.0 27.3 85.4 117.0	42.0 107.5 110.0 145.0 73.0 89.0	51.03 29.20 16.20 3.38 11.61 13.72	0.000113 0.000064 0.000036 0.000007 0.000026 0.000030	0.0047 0.0069 0.0039 0.0011 0.0019	0.284 0.415 0.236 0.065 0.112 0.161	94.8 59.9 45.4 21.9 15.8 23.4	10599.0 10658.9 10704.2 10726.1 10742.0 10765.3	1723. 1733. 1740. 1744. 1746. 1750.
shut Down 5/26/2013 7/11/2013 7/25/2013 7/31/2013 8/8/2013 8/22/2013 8/22/2013 9/3/2013 9/3/2013	W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-1s W-1 & W-A W-1 & W-A EW-1 & W-A EW-1 & W-A	26/13 for 2nd Quan 16729.1 16916.1 17250.6 17394.8 17587.3 17924.8 18065.9 18210.6	6534.6 6869.1 7013.3 7205.8 7543.3 7684.4 7829.1 8237.8 8241.2	334.5 144.2 192.5 337.5 141.1 144.7 408.7	1802.3 1031.2 572.0 119.5 410.0 484.5 710.0	159.0 105.1 73.0 27.3 85.4 117.0	42.0 107.5 110.0 145.0 73.0 89.0 70.0	51.03 29.20 16.20 3.38 11.61 13.72 20.10	0.000113 0.000064 0.000036 0.000007 0.000026 0.000030	0.0047 0.0069 0.0039 0.0011 0.0019 0.0027	0.284 0.415 0.236 0.065 0.112 0.161 0.186	94.8 59.9 45.4 21.9 15.8 23.4 76.1	10599.0 10658.9 10704.2 10726.1 10747.0 10765.3 10841.4	1723. 1733. 1740. 1744. 1746. 1750.
hut Down 5/26/2013 7/11/2013 7/25/2013 7/31/2013 8/8/2013 5/22/2013 5/28/2013 9/3/2013 5/20/2013 5/20/2013	W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-1s W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-1s 9/21/13 thru 9/2	26/13 for 2nd Quan 16729.1 16916.1 17250.6 17394.8 17587.3 17924.8 18065.9 18210.6 18619.3 27/13 due to low pr	6534.6 6869.1 7013.3 7205.8 7543.3 7684.4 7829.1 8237.8 8241.2	334.5 144.2 192.5 337.5 141.1 144.7 408.7 3.4	1802.3 1031.2 572.0 119.5 410.0 484.5 710.0 330.0	159.0 105.1 73.0 27.3 85.4 117.0 79.8 42.4	42.0 107.5 110.0 145.0 73.0 89.0 70.0 127.0	51.03 29.20 16.20 3.38 11.61 13.72 20.10 9.34	0.000113 0.000064 0.000036 0.000007 0.000026 0.000030 0.000044 0.000021	0.0047 0.0069 0.0039 0.0011 0.0019 0.0027 0.0031	0.284 0.415 0.236 0.065 0.112 0.161 0.186 0.157	94.8 59.9 45.4 21.9 15.8 23.4 76.1 0.5	10599.0 10658.9 10704.2 10726.1 10747.0 10765.3 10841.4	1723. 1733. 1740. 1744. 1746. 1750. 1762.
hut Down 1/26/2013 1/11/2013 1/25/2013 1/31/2013 1/32/2013 1/22/2013 1/28/2013 1/28/2013 1/20/2013 1/20/2013 1/20/2013 1/20/2013	W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-15 W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-A W-1 & W-A EW-1 & W-A EW-1 & W-A EW-1 & W-A	26/13 for 2nd Quan 16729.1 16916.1 17250.6 17394.8 17587.3 17924.8 18065.9 18210.6 18619.3 27/13 due to low pr	6534.6 6869.1 7013.3 7205.8 7543.3 7684.4 7829.1 8237.8 8241.2	334.5 144.2 192.5 337.5 141.1 144.7 408.7 3.4	1802.3 1031.2 572.0 119.5 410.0 484.5 710.0 330.0	159.0 105.1 73.0 27.3 85.4 117.0 79.8 42.4	42.0 107.5 110.0 145.0 73.0 89.0 70.0 127.0	51.03 29.20 16.20 3.38 11.61 13.72 20.10 9.34	0.000113 0.000064 0.000036 0.000007 0.000026 0.000030 0.000044 0.000021	0.0047 0.0069 0.0039 0.0011 0.0019 0.0027 0.0031 0.0026	0.284 0.415 0.236 0.065 0.112 0.161 0.186 0.157	94.8 59.9 45.4 21.9 15.8 23.4 76.1 0.5	10599.0 10658.9 10704.2 10726.1 10742.0 10765.3 10841.4 10842.0	1723. 1733. 1740. 1744. 1746. 1750. 1762. 1762.
hut Down //26/2013 //11/2013 //25/2013 //31/2013 //31/2013 //22/2013 //28/2013 //28/2013 //20/2013 //20/2013 hut Down //27/2013 //27/2013	W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-16 W-1 & W-A	26/13 for 2nd Quan 16729.1 16916.1 17250.6 17394.8 17587.3 17924.8 18065.9 18210.6 18619.3 27/13 due to low pr 18622.7	6534.6 6869.1 7013.3 7205.8 7543.3 7684.4 7829.1 8237.8 8241.2 ropane 8407.0 8575.2	334.5 144.2 192.5 337.5 141.1 144.7 408.7 3.4	1802.3 1031.2 572.0 119.5 410.0 484.5 710.0 330.0	159.0 105.1 73.0 27.3 85.4 117.0 79.8 42.4	42.0 107.5 110.0 145.0 73.0 89.0 70.0 127.0	51.03 29.20 16.20 3.38 11.61 13.72 20.10 9.34 9.81 8.70	0.000113 0.000064 0.000036 0.000007 0.000026 0.000030 0.000044 0.000021	0.0047 0.0069 0.0039 0.0011 0.0019 0.0027 0.0031 0.0026	0.284 0.415 0.236 0.065 0.112 0.161 0.186 0.157 0.097 0.118	94.8 59.9 45.4 21.9 15.8 23.4 76.1 0.5	10599.0 10658.9 10704.2 10726.1 10742.0 10765.3 10841.4 10842.0	1773. 1733. 1740. 1744. 1746. 1750. 1762. 1762.
hut Down //26/2013 //11/2013 //25/2013 //31/2013 //38/2013 //22/2013 //28/2013 //28/2013 //28/2013 //28/2013 //20/2013 hut Down //27/2013 //4/2013 //4/2013	W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-1s W-1 & W-A	26/13 for 2nd Quan 16729.1 16916.1 17250.6 17394.8 17587.3 17924.8 18065.9 18210.6 18619.3 27/13 due to low pr 18622.7 18788.5 18956.7	6534.6 6869.1 7013.3 7205.8 7543.3 7684.4 7829.1 8237.8 8241.2 ropane 8407.0 8575.2 8839.3	334,5 144,2 192,5 337,5 141,1 144,7 408,7 3,4 165,8 168,2 264,1	1802.3 1031.2 572.0 119.5 410.0 484.5 710.0 330.0 346.5 307.1 91.0	159.0 105.1 73.0 27.3 85.4 117.0 79.8 42.4 83.1 73.4 35.8	42.0 107.5 110.0 145.0 73.0 89.0 70.0 127.0 75.0 102.5 90.0	51.03 29.20 16.20 3.38 11.61 13.72 20.10 9.34 9.81 8.70 2.58	0.000113 0.000064 0.000036 0.000007 0.000026 0.000030 0.000044 0.000021	0.0047 0.0069 0.0039 0.0011 0.0019 0.0027 0.0031 0.0026	0.284 0.415 0.236 0.065 0.112 0.161 0.186 0.157 0.097 0.118	94.8 59.9 45.4 21.9 15.8 23.4 76.1 0.5	10599.0 10658.9 10704.2 10726.1 10742.0 10765.3 10841.4 10842.0	1773. 1733. 1740. 1744. 1746. 1750. 1762. 1765. 1768.
hut Down /26/2013 /11/2013 /25/2013 /25/2013 /331/2013 /28/2013 /28/2013 /28/2013 /28/2013 /20/2013 hut Down /27/2013 /0/4/2013 /0/1/2013 /0/1/2013	W-1 & W-A W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-15 W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-A	26/13 for 2nd Quan 16729.1 16916.1 17250.6 17394.8 17587.3 17924.8 18065.9 18210.6 18619.3 27/13 due to low pr 18622.7 18788.5 19920.8	6534.6 6869.1 7013.3 7205.8 7543.3 7684.4 7829.1 8237.8 8241.2 ropane 8407.0 8575.2 8839.3	334.5 144.2 192.5 337.5 141.1 144.7 408.7 3.4 165.8 168.2 264.1 240.9	1802.3 1031.2 572.0 119.5 410.0 484.5 710.0 330.0 346.5 307.1 91.0	159.0 105.1 73.0 27.3 85.4 117.0 79.8 42.4 83.1 73.4 35.8	42.0 107.5 110.0 145.0 73.0 89.0 70.0 127.0 75.0 102.5 90.0 70.0	51.03 29.20 16.20 3.38 11.61 13.72 20.10 9.34 9.81 8.70 2.58 11.61	0.000113 0.000064 0.000036 0.000007 0.000026 0.000030 0.000044 0.000021 0.000022 0.000019 0.000006	0.0047 0.0069 0.0039 0.0011 0.0019 0.0027 0.0031 0.0026 0.0016 0.0020 0.0005	0.284 0.415 0.236 0.065 0.112 0.161 0.186 0.157 0.097 0.118 0.031 0.007	94.8 59.9 45.4 21.9 15.8 23.4 76.1 0.5	10599.0 10658.9 10704.2 10726.1 10742.0 10765.3 10841.4 10842.0 10858.1 10877.9 10886.0	1723 1733 1740 1744 1746 1750 1762 1765 1768 1770 1774
hut Down 5/26/2013 7/11/2013 7/25/2013 7/25/2013 7/25/2013 8/8/2013 8/22/2013 8/28/2013 9/3/2013 9/3/2013 9/3/2013 0/11/2013 0/11/2013 0/12/2013	W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-1s W-1 & W-A	26/13 for 2nd Quan 16729.1 16916.1 17750.6 17394.8 17587.3 17924.8 18065.9 18210.6 18619.3 27/13 due to low pr 18622.7 18788.5 18956.7 19220.8	6534.6 6869.1 7013.3 7205.8 7543.3 7684.4 7829.1 8237.8 8241.2 ropane 8407.0 8575.2 8839.3	334,5 144,2 192,5 337,5 141,1 144,7 408,7 3,4 165,8 168,2 264,1	1802.3 1031.2 572.0 119.5 410.0 484.5 710.0 330.0 346.5 307.1 91.0	159.0 105.1 73.0 27.3 85.4 117.0 79.8 42.4 83.1 73.4 35.8	42.0 107.5 110.0 145.0 73.0 89.0 70.0 127.0 75.0 102.5 90.0	51.03 29.20 16.20 3.38 11.61 13.72 20.10 9.34 9.81 8.70 2.58	0.000113 0.000064 0.000036 0.000007 0.000026 0.000030 0.000044 0.000021	0.0047 0.0069 0.0039 0.0011 0.0019 0.0027 0.0031 0.0026	0.284 0.415 0.236 0.065 0.112 0.161 0.186 0.157 0.097 0.118	94.8 59.9 45.4 21.9 15.8 23.4 76.1 0.5	10599.0 10658.9 10704.2 10726.1 10742.0 10765.3 10841.4 10842.0 10858.1 10877.9 10886.0 10911.9	1723 1733 1740 1744 1746 1750 1762 1765 1768 1770 1774
hut Down 1/26/2013 1/11/2013 1/21/2013 1/21/2013 1/25/2013 1/22/2013 1/22/2013 1/22/2013 1/22/2013 1/22/2013 1/22/2013 1/22/2013 1/22/2013 1/22/2013 1/22/2013 1/22/2013 1/22/2013 1/22/2013 1/22/2013	W-1 & W-A W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-15 W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-A	26/13 for 2nd Quan 16729.1 16916.1 17250.6 17394.8 17587.3 17924.8 18065.9 18210.6 18619.3 27/13 due to low pr 18622.7 18788.5 19920.8	6534.6 6869.1 7013.3 7205.8 7543.3 7684.4 7829.1 8237.8 8241.2 ropane 8407.0 8575.2 8839.3	334.5 144.2 192.5 337.5 141.1 144.7 408.7 3.4 165.8 168.2 264.1 240.9	1802.3 1031.2 572.0 119.5 410.0 484.5 710.0 330.0 346.5 307.1 91.0	159.0 105.1 73.0 27.3 85.4 117.0 79.8 42.4 83.1 73.4 35.8	42.0 107.5 110.0 145.0 73.0 89.0 70.0 127.0 75.0 102.5 90.0 70.0	51.03 29.20 16.20 3.38 11.61 13.72 20.10 9.34 9.81 8.70 2.58 11.61	0.000113 0.000064 0.000036 0.000007 0.000026 0.000030 0.000044 0.000021 0.000022 0.000019 0.000006	0.0047 0.0069 0.0039 0.0011 0.0019 0.0027 0.0031 0.0026 0.0016 0.0020 0.0005	0.284 0.415 0.236 0.065 0.112 0.161 0.186 0.157 0.097 0.118 0.031 0.007	94.8 59.9 45.4 21.9 15.8 23.4 76.1 0.5	10599.0 10658.9 10704.2 10726.1 10742.0 10765.3 10841.4 10842.0 10858.1 10877.9 10886.0	1723. 1733. 1740. 1744. 1746. 1750. 1762. 1765. 1768. 1770. 1774.
hut Down 1/26/2013 1/11/2013 1/11/2013 1/25/2013 1/31/2013 8/8/2013 1/22/2013 1/22/2013 1/22/2013 1/20/2013 1/20/2013 1/20/2013 1/20/2013 1/20/2013 1/20/2013 1/20/2013 1/20/2013 1/20/2013 1/20/2013 1/20/2013 1/20/2013 1/20/2013	W-1 & W-A W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-1 W-1 & W-A W-1 & W-A W-1 & W-A EW-1 & W-1 EW-1 & W-1 EW-1 & W-A EW-1 & W-A EW-1 & W-A W-1 & W-A EW-1 & W-A EW-1 & W-A EW-1 & W-A	26/13 for 2nd Quan 16729.1 16916.1 17750.6 17394.8 17587.3 17924.8 18065.9 18210.6 18619.3 27/13 due to low pr 18622.7 18788.5 18956.7 19220.8	6534.6 6869.1 7013.3 7205.8 7543.3 7684.4 7829.1 8237.8 8241.2 ropane 8407.0 8575.2 8839.3 9080.2 9202.3	334,5 144,2 192,5 337,5 141,1 144,7 408,7 3,4 165,8 168,2 264,1 240,9 122,1	1802.3 1031.2 572.0 119.5 410.0 484.5 710.0 330.0 346.5 307.1 91.0 410.0 439.7	159.0 105.1 73.0 27.3 85.4 117.0 79.8 42.4 83.1 73.4 35.8 142.4	42.0 107.5 110.0 145.0 73.0 89.0 70.0 127.0 75.0 102.5 90.0 70.0 77.5	\$1.03 29.20 16.20 3.38 11.61 13.72 20.10 9.34 9.81 8.70 2.58 11.61 12.45	0.000113 0.000064 0.000036 0.000007 0.000030 0.000044 0.000021 0.000002 0.000006 0.000006 0.000006	0.0047 0.0069 0.0039 0.0011 0.0019 0.0027 0.0031 0.0026 0.0016 0.0020 0.0005 0.0018	0.284 0.415 0.236 0.065 0.112 0.161 0.186 0.157 0.097 0.118 0.031 0.007 0.128	94.8 59.9 45.4 21.9 15.8 23.4 76.1 0.5 16.1 19.8 8.1 25.9	10599.0 10658.9 10704.2 10726.1 10742.0 10765.3 10841.4 10842.0 10858.1 10877.9 10886.0 10911.9	1723 1733 1740 1744 1746 1750 1762 1762 1768 1776 1774 1776
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7/24/2014 Ground Zero Apalysis, Inc.

Table 8: Summary of DPE System Groundwater Extraction Data

Well	Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH-Gasoline	MTBE
		μg/L	μg/L	μg/L	μg/L	μg/L	μg/L
GW-INF	12/13/2011	110	9.4	2.5	510	2,400	-
(GW INF KO)	1/13/2012	110	120	74	510	6,400	-
(W-1 & W-A)	1/18/2012	44	54	39	360	3,800	-
	1/19/2012	37	43	39	280	2,800	-
	3/8/2012	7.3	8.3	2.3	19	190	-
	4/3/2012	8.6	9.7	3.4	36	810	-
	5/3/2012	300	160	26	280	2,800	-
_	6/7/2012	72	89	23	260	5,000	-
	7/9/2012	110	51	21	120	2,600	-
_	8/16/2012	47	35	19	99	2,300	-
	9/13/2012	74	26	14	70	1,800	-
	10/16/2012	140	44	46	110	1,800	-
	2/4/2013	130	40	32	1 10	1,300	-
	4/10/2013	200	58	48	160	2,000	
	5/7/2013	< 0.3	<0.3	<0.3	<0.6	<50	-
	5/16/2013	96	30	32	110	1,600	5.5
	8/22/2013	<0.3	< 0.3	<0.3	<0.6	<50	-
	9/3/2013*	190	35	26	150	1,200	-
	9/27/2013	94	30	12	120	1,300	-
	10/11/2013*	99	18	24	88	870	-
	10/22/2013	130	62	30	210	1,700	-
	11/6/2013*	120	22	35	140	1,400	-
	1/15/2014	43	18	19	150	2,600	-
	1/30/2014	98	30	45	170	2,500	2.4
	2/11/2014	100	35	20	150	1,700	<12
	2/25/2014	150	45	27	180	1,700	4.2
	3/18/2014	61	14	18	80	2,600	-
	4/15/2014	52	10	14	53_	2,000	-
	4/1/2014	19	2.6	4.9	19	340	-
	4/28/2014	17	3	7.7	22	1,800	-
	5/9/2014	98	22	33	120	2,300	3.4
	6/26/2014	17	1	2.5	9.1	610	0.87
	7/10/2014	96	17	34	170	2,000	ND<0.5
W-1 GW-INF	5/16/2013	96	30	32	110	1,600	5.5
W-A GW-INF	5/16/2013	67	15	16	54	1,000	2.6

^{* =} sample collected following 2 weeks of extraction from the upper/lower zone

Ground Zero Analysis, Inc. 7/24/2014

Table 9: Summary of DPE System Soil Vapor Extraction Data

Well	Date	TPH-Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes	PID
		mg/m³	mg/m³	mg/m³	mg/m ³	mg/m³	ppm
SVE-INF	12/8/2011	2380	7.1	5.6	2.9	15.5	200
	1/5/2012	3360	29.8	15.8	23.6	70.4	262
	3/8/2012	3490	30.4	28.6	12	55.2	282
	5/16/2012	251	7.86	4.43	2.34	9.56	51.1
_	4/11/2013	37	13	2.9	2.1	5.9	-
SVE-INF UPPER	8/22/2013*	13	0.064	0.076	0.0096	0.078	12.5
(EW-1 & W-1s)	9/3/2013	130	2.2	2.2	4.3	19	23.8
	9/20/2013*	330	0.85	1.5	<2.5	1.3	36.9
	10/11/2013	91	2.4	1.6	4.0	14	32.9
	10/22/2013*	210	1.5	3.7	<2.5	2.6	51.1
	11/6/2013	44	0.77	1.2	3.7	12	35.9
	1/15/2014*	600	1.3	1.2	0.09	1.3	72.9
	1/30/2014	31	1.5	2.6	0.19	0.32	85.2
	2/11/2014*	250	0.72	0.79	0.093	0.52	45.1
SVE-INF LOWER	8/22/2013	410	59	13	4.9	22	73.6
(W-1 & W-A)	9/3/2013*	710	38	9.5	8.3	28	81.4
	9/20/2013		-	-	-	-	-
	10/11/2013*	99	12	2.7	3.1	8.6	69.1
	10/22/2013	410	29	7.1	0.87	4.2	130
	11/6/2013*	120	15	4.5	7.7	22	60.9
	1/15/2014	1,800	50	12	2.2	12	205
	1/30/2014*	180	19	42	2	3.7	220
	2/11/2014	200	<1	3.2	0.44	1.5	149.2
	3/18/2014	0.89	<20	0.01	0.011	0.041	-
	4/1/2014	85	16	1.8	4.6	10	-
	4/15/2014	1,100	46	11	17	49	99.9
	4/28/2014	560	21	4.5	4.3	12	-
	5/9/2014	1,000	76	_12	13	28	159
	6/26/2014	1,200	15	1.7	1.9	5.6	290
	7/10/2014	170	7.5	8.5	11	31	-
W-1 SVE-INF	5/16/2013	100	16	4.8	5.2	11	48.1
W-A SVE-INF	5/16/2013	39	2.3	0.64	0.83	1.7	16.1
EW-1 SVE-INF	5/16/2013	22	0.065	0.069	0.12	0.54	7.6
W-1s SVE-INF	5/16/2013	85_	<0.08	0.16	0.35	1.4	32.6

^{*} = sample collected following 2 weeks of extraction from the upper/lower zone

Ground Zero Analysis, Inc.

Appendix B

Laboratory Analytical Data Sheets



Date of Report: 02/07/2014

Project Manager

Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354

Client Project:

1262.2

BCL Project:

Sullins

BCL Work Order:

1402203

Invoice ID:

B165814

Enclosed are the results of analyses for samples received by the laboratory on 1/30/2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; AK UST101



Table of Contents

Sample Information	
Chain of Custody and Cooler Receipt form	3
Chain of Custody and Cooler Receipt form	3
Sample Results	
1402203-01 - GW-INF	
Volatile Organic Analysis (EPA Method 8260B)	7
1402203-02 - SVE-INF Lower	
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	3
1402203-03 - SVE-INF Upper	
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP))
Quality Control Reports	
Volatile Organic Analysis (EPA Method 8260B)	
Method Blank Analysis 1	(
Laboratory Control Sample1	1
Precision and Accuracy1	2
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	
Method Blank Analysis1	3
Laboratory Control Sample1	
Notes	
Notes and Definitions	5

Environmental Testing Laboratory Since 1949 Laboratories, Inc.

Chain of Custody and Cooler Receipt Form for 1402203

Page 1 of 3

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1	Client Address: 1	172 Kansa	as Avenue	Type of Evant: GWM Sys	Monitoring Drilling Other	اړ	er, G	ø.	BTEX	1 7						Em	ail Lab	Report (.pdf):	Yes No	_
-		Modesto, C		Client Email: gti@gtien\		alner	Wat	Typ.	+ 84	BTEX			-					Lab Report			\dashv
	Client Phone: (2			Client Fax: (209) 522-4		Containers	Soll,	айол		1 4	1						l Lab R			☐ Yes ☐ No	\dashv
	Sampli Date	ng info:	Sampled By (initials EDF Field ID	, 	GT Cription / Location	No. of	Matrix (Soll, Water,	Preservation Type	TPH-6	7PH-6								Special in	structi	ons / Remarks	
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21			cooler / Ice chest to	3ZA / Geological Technic	CS /	200	-C	Ha	/	Box	ian	-	<u>ر.</u> رجها	<u> </u>	775	21	920	1:3019		1730	
	(450)	1-30-14				RE	L	Ho	س	Boo	gan	-BC	LA	5/18	30-1	7 ' RFC.	730	m.	× 340	5 1.30. Agv. 2/2013	

Page 3 of 15



Chain of Custody and Cooler Receipt Form for 1402203 Page 2 of 3

Submission #: 14-0228	3		-		RM		-	01/13 1		
				1		- LOONEA	MED		rper u	OUID
SHIPPING INFO					SHIPPING 1est 🎾				FREE LI	
Federal Express □ UPS □ BC Lab Field Service Ø Othe	er 🗆 (Specif	v)			ter ☐ (Sp				1.0 1.	
					,-,-					
Refrigerant: Ice Blue Ic	- M - N -		Oak an E	0				- 1		
10.5 pt. 10.5 ct. 2001 (1.4001 pt. 2001)	Z. Ch. Williams	ne 🗆	Other 🖸		ments:	•	_			
Custody Seals Ice Chest II	Contal Intact? Ye			e Ø∕ Con	nments:	<u> </u>		•		
All samples received? Yes ✓ No □	All sample	s containe	ırs intact?	Yes No	0	Descri	otion (s) mat	tch COC?	Yes 📈 No	0
COC Received	Emissivity:									
©YES □ NO								1		
GATES LINO	Temperatu	re: (A)_	0.9	°C /	(C) (9.9	. ° C	Analyst	Init <u>S</u>	5_
	ı						_	',		
SAMPLE CONTAINERS		· ·	T	T 		NUMBERS	7	, ,	9	10
OT GENERAL MINERAL/ GENERAL	+	2	3	4	5	1 6	'	 	1 3	10
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PT CYANIDE	T		1	İ	ĺ	1				
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T CHEMICAL OXYGEN DEMAND			ļ				•			
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T EPA 515.1/8150	1									
T BPA 525							-			
T EPA 525 TRAVEL BLANK										
Omi EPA 547										
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T EPA 548						_				
T EPA 549	 									
T EPA 632										
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T AMBER		-								
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Chain of Custody and Cooler Receipt Form for 1402203 Page 3 of 3

BC LABORATORIES INC.		COC	OLER REC	EIPT FO	RM	Rev. No.	15 07/	01/13	Page 2	of 2
Submission #: 14-0220	22									
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SHIPPING INFOR	Hand De	livery		Ice Ch	SHIPPING lest 🗗 ler 🛘 (Sp	None D	Box C		FREE LIG	ll ll
Refrigerant: Ice [] Blue Ice [] No	ne 🗷	Other 🗆	Comi	ments:					
Custody Seals Toe Chest	∉ Contai	nersiD.	None	Ø Com						
All samples received? Yes, ✓ No.□	All sample	s contaîne	rs intact? \	res Æ? No		Descri	ption(s) ma	tch COC?	Yes 🗗 No	
COC Received Em	iceivitu:	ØS -	Container:	Teller	Thermor	matar ID:	ø	D-4-07	me <u>1.30.</u>	2205
D/VEC DINO							/			- 11
1	Temperatu	re: (A)_	Pcom_	_°C /	(C) 7	zmp	*C	Analyst	Init <u>545</u>	
	r e		The state of the state of			NUMBERS				
SAMPLE CONTAINERS	1	2	3	4	T		7	В	9	10
OT GENERAL MINERAL/ GENERAL			1 3		5	6	+	 	+	+-'0
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PT INORGANIC CHEMICAL METALS									,	
PT CYANIDE										
PT NITROGEN FORMS				_	1					
PT TOTAL SULFIDE										
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PT TOTAL ORGANIC CARBON										
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T CHEMICAL OXYGEN DEMAND										
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T EPA 515.1/8150										
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umma Canister	J	I			1					II.

Ground Zero Analysis, Inc.

1172 Kansas Avenue Modesto, CA 95354

02/07/2014 15:27 Reported:

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory

Client Sample Information

1402203-01

COC Number:

Project Number:

Sullins

Sampling Location:

Sampling Point: Sampled By:

GW-INF

Andrew Dorn of GTIM

Receive Date:

01/30/2014 22:05 01/30/2014 11:35

Sampling Date: Sample Depth:

Lab Matrix:

Water

Sample Type:

Groundwater

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): GW-INF Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1402203-02 **COC Number:**

Project Number:

Sullins

Sampling Location:

Sampling Point: Sampled By:

SVE-INF Lower

Andrew Dorn of GTIM

Receive Date:

01/30/2014 22:05 01/30/2014 12:00

Sampling Date:

Sample Depth:

Air

Lab Matrix:

Vapor or Air Sample Type:

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): SVE-INF Lower

Matrix: GS

Sample QC Type (SACode): CS

Cooler ID:

1402203-03

COC Number:

Project Number:

Sampling Location:

Sampling Point:

Sampled By:

Sullins

SVE-INF Upper Andrew Dorn of GTIM Receive Date:

01/30/2014 22:05

Sampling Date:

01/30/2014 12:25

Vapor or Air

Sample Depth:

Lab Matrix: Sample Type: Air

Delivery Work Order:

Global ID: T0600100116

Location ID (FieldPoint): SVE-INF Upper

Matrix: GS

Sample QC Type (SACode): CS

Cooler ID:

Reported: 02/07/2014 15:27

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID:	1402203-01	Client Sampl	e Name:	Sullins, GW-INF, 1/30/2014 11:35:00AM, Andrew Dorn									
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #				
Benzene		98	ug/L	1.0	0.17	EPA-8260B	ND	A01	1				
Ethylbenzene		45	ug/L	0.50	0.098	EPA-8260B	ND		2				
Methyl t-butyl ether		2.4	ug/L	0.50	0.11	EPA-8260B	ND		2				
Toluene		30	ug/L	0.50	0.093	EPA-8260B	ND		2				
Total Xylenes		170	ug/L	1.0	0.36	EPA-8260B	ND		2				
p- & m-Xylenes		130	ug/L	0.50	0.28	EPA-8260B	ND		2				
o-Xylene		40	ug/L	0.50	0.082	EPA-8260B	ND		2				
Total Purgeable Petrole Hydrocarbons	um	2500	ug/L	50	7.2	Luft-GC/MS	ND		2				
1,2-Dichloroethane-d4 (S	Surrogate)	114	%	75 - 125 (LC	L - UCL)	EPA-8260B			1				
1,2-Dichloroethane-d4 (\$	Surrogate)	108	%	75 - 125 (LC	L - UCL)	EPA-8260B			2				
Toluene-d8 (Surrogate)		87.2	%	80 - 120 (LC	L - UCL)	EPA-8260B			1				
Foluene-d8 (Surrogate)		95.1	%	80 - 120 (LC	L - UCL)	EPA-8260B			2				
4-Bromofluorobenzene (Surrogate)	93.0	%	80 - 120 (LC	L - UCL)	EPA-8260B			1				
I-Bromofluorobenzene (Surrogate)	110	%	80 - 120 (LC	L - UCL)	EPA-8260B			2				

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	01/31/14	02/03/14 10:17	EAR	MS-V10	2	BXA1411	
2	EPA-8260B	01/31/14	01/31/14 19:15	EAR	MS-V10	1	BXA1411	

Reported: 02/07/2014 15:27

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID:	1402203-02	Client Sampl	e Name:	Sullins, S	VE-INF Lo	wer, 1/30/2014	12:00:00PM, A	ndrew Dorn	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Benzene		19000	ug/m3	1000	110	EPA-TO-15	ND	A01	1
1,1-Difluoroethane		ND	ug/m3	2500	1000	EPA-TO-15	ND	A01	1
Ethylbenzene		2000	ug/m3	2500	120	EPA-TO-15	ND	J,A01	1
Toluene		42000	ug/m3	1000	100	EPA-TO-15	ND	A01	1
Total Xylenes		3700	ug/m3	5000	400	EPA-TO-15	ND	J,A01	1
Total Petroleum Hydrod	arbons	180000	ug/m3	100000	20000	EPA-TO-15	ND	A01	1
4-Bromofluorobenzene (Surrogate)	89.8	%	70 - 130 (LCI	L - UCL)	EPA-TO-15			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-TO-15	01/31/14	01/31/14 19:06	MJB	MS-A1	500	BXA1923	

Ground Zero Analysis, Inc.

1172 Kansas Avenue Modesto, CA 95354 Reported: 02/07/2014 15:27

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID:	1402203-03	Client Sampl	e Name:	Sullins, S\	/E-INF Up	per, 1/30/2014 1	2:25:00PM, A	ndrew Dorn	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene		1500	ug/m3	200	22	EPA-TO-15	ND	A01	1
1,1-Difluoroethane		ND	ug/m3	500	200	EPA-TO-15	ND	A01	1
Ethylbenzene		190	ug/m3	500	23	EPA-TO-15	ND	J,A01	1
Toluene		2600	ug/m3	200	20	EPA-TO-15	ND	A01	1
Total Xylenes	-	320	ug/m3	1000	80	EPA-TO-15	ND	J,A01	1
Total Petroleum Hydroc	arbons	31000	ug/m3	20000	3900	EPA-TO-15	ND	A01	1
4-Bromofluorobenzene (Surrogate)	97.6	%	70 - 130 (LCI	L - UCL)	EPA-TO-15			1

			Run				QC	
Run.#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-TO-15	02/03/14	02/03/14 15:05	MJB	MS-A1	100	BXB0039	



Reported: 02/07/2014 15:27

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXA1411						
Benzene	BXA1411-BLK1	ND	ug/L	0.50	0.083	
Ethylbenzene	BXA1411-BLK1	ND	ug/L	0.50	0.098	
Methyl t-butyl ether	BXA1411-BLK1	ND	ug/L	0.50	0.11	
Toluene	BXA1411-BLK1	ND	ug/L	0.50	0.093	
Total Xylenes	BXA1411-BLK1	ND	ug/L	1.0	0.36	
p- & m-Xylenes	BXA1411-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BXA1411-BLK1	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	BXA1411-BLK1	ND	ug/L	50	7,2	
1,2-Dichloroethane-d4 (Surrogate)	BXA1411-BLK1	108	%	75 - 12	(LCL - UCL)	
Toluene-d8 (Surrogate)	BXA1411-BLK1	98.0	%	80 - 12	(LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BXA1411-BLK1	96.1	%	80 - 12	(LCL - UCL)	

Ground Zero Analysis, Inc.

1172 Kansas Avenue Modesto, CA 95354 Reported: 02/07/2014 15:27

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Laboratory Control Sample

Constituent							Control Limits				
	QC Sample ID	Туре	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab Quals	
QC Batch ID: BXA1411											
Benzene	BXA1411-BS1	LCS	23.980	25.000	ug/L	95.9		70 - 130			
Toluene	BXA1411-BS1	LCS	27.020	25.000	ug/L	108		70 - 130			
1,2-Dichloroethane-d4 (Surrogate)	BXA1411-BS1	LCS	10.410	10.000	ug/L	104		75 - 125			
Toluene-d8 (Surrogate)	BXA1411-BS1	LCS	9.9200	10.000	ug/L	99.2		80 - 120			
4-Bromofluorobenzene (Surrogate)	BXA1411-BS1	LCS	10.050	10.000	ug/L	100		80 - 120			

Reported: 02/07/2014 15:27

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Precision & Accuracy

Constituent									<u>Cont</u>	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
	Туре	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BXA1411	Use	d client samp	ole: N								
Benzene	 MS	1400811-50	ND	22.570	25.000	ug/L		90.3		70 - 130	
	MSD	1400811-50	ND	24.190	25.000	ug/L	6.9	96.8	20	70 - 130	
Toluene	MS	1400811-50	ND	23.800	25.000	ug/L		95.2		70 - 130	
	MSD	1400811-50	ND	26.720	25.000	ug/L	11.6	107	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1400811-50	ND	10.930	10.000	ug/L		109		75 - 125	
	MSD	1400811-50	ND	10.570	10.000	ug/L	3.3	106		75 - 125	
Toluene-d8 (Surrogate)	MS	1400811-50	ND	9.9800	10.000	ug/L		99.8		80 - 120	
	MSD	1400811-50	ND	10.310	10.000	ug/L	3.3	103		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1400811-50	ND	9.5600	10.000	ug/L		95.6		80 - 120	
	MSD	1400811-50	ND	10.220	10.000	ug/L	6.7	102		80 - 120	

Reported: 02/07/2014 15:27

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXA1923						
Benzene	BXA1923-BLK1	ND	ug/m3	2.0	0.22	
1,1-Difluoroethane	BXA1923-BLK1	ND	ug/m3	5.0	2.0	
Ethylbenzene	BXA1923-BLK1	ND	ug/m3	5.0	0.23	
Toluene	BXA1923-BLK1	ND	ug/m3	2.0	0.20	
Total Xylenes	BXA1923-BLK1	ND	ug/m3	10	0.80	·
Total Petroleum Hydrocarbons	BXA1923-BLK1	ND	ug/m3	200	39	
4-Bromofluorobenzene (Surrogate)	BXA1923-BLK1	85.7	%	70 - 130 (LCL - UCL)		
QC Batch ID: BXB0039						
Benzene	BXB0039-BLK1	ND	ug/m3	2.0	0.22	
1,1-Difluoroethane	BXB0039-BLK1	ND	ug/m3	5.0	2.0	
Ethylbenzene	BXB0039-BLK1	ND	ug/m3	5.0	0.23	
Toluene	BXB0039-BLK1	ND	ug/m3	2.0	0.20	
Total Xylenes	8XB0039-BLK1	ND	ug/m3	10	0.80	
Total Petroleum Hydrocarbons	BXB0039-BLK1	ND	ug/m3	200	39	
4-Bromofluorobenzene (Surrogate)	BXB0039-BLK1	94800	%	70 - 130	(LCL - UCL)	

Reported: 02/07/2014 15:27

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Laboratory Control Sample

								Control Limits		
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BXA1923										
Benzene	BXA1923-BS1	LCS	13.795	15.974	ug/m3	86.4		70 - 130		
	BXA1923-BSD1	LCSD	14.166	15.974	ug/m3	88.7	2.7	70 - 130	30	
1,1-Diffuoroethane	BXA1923-BS1	LCS	ND		ug/m3			70 - 130		
	BXA1923-BSD1	LCSD	ND		ug/m3			70 - 130	30	
Elhylbenzene	BXA1923-BS1	LCS	25.844	21.711	ug/m3	119		70 - 130		
	BXA1923-BSD1	LCSD	27.164	21.711	ug/m3	125	5.0	70 - 130	30	
Toluene	BXA1923-BS1	LCS	17.821	18.842	ug/m3	94.6		70 - 130		
	BXA1923-BSD1	LCSD	18.480	18.842	ug/m3	98.1	3.6	70 - 130	30	
Total Xylenes	BXA1923-BS1	LCS	51.020	65.132	ug/m3	78.3		70 - 130		_
	BXA1923-BSD1	LCSD	54.177	65.132	ug/m3	83.2	6.0	70 - 130	30	
4-Bromofluorobenzene (Surrogate)	BXA1923-BS1	LCS	54.260	71.574	ug/m3	75.8		70 - 130		
	BXA1923-BSD1	LCSD	61.024	71.574	ug/m3	85.3	11.7	70 - 130		
QC Batch ID: BXB0039		_								
Benzene	BXB0039-BS1	LCS	15.316	15.974	ug/m3	95.9		70 - 130		
	BXB0039-BSD1	LCSD	15.150	15.974	ug/m3	94.8	1.1	70 - 130	30	
1,1-Difluoroethane	BXB0039-BS1	LCS	ND		ug/m3			70 - 130		
	BXB0039-BSD1	LCSD	ND		ug/m3			70 - 130	30	
Ethylbenzene	BXB0039-BS1	LCS	24.112	21.711	ug/m3	111		70 - 130		
	BXB0039-BSD1	LCSD	24.746	21.711	ug/m3	114	2.6	70 - 130	30	
Toluene	BXB0039-BS1	LCS	19.245	18.842	ug/m3	102		70 - 130		
	BXB0039-BSD1	LCSD	19.366	18.842	ug/m3	103	0.6	70 - 130	30	
Total Xylenes	BXB0039-BS1	LCS	47.012	65.132	ug/m3	72.2		70 - 130		
	BXB0039-BSD1	LCSD	48.141	65.132	ug/m3	73.9	2.4	70 - 130	30	
4-Bromofluorobenzene (Surrogate)	BXB0039-BS1	LCS	57.152	0.071574	ug/m3	79900		70 - 130		
	BXB0039-BSD1	LCSD	58.283	0.071574	ug/m3	81400	2.0	70 - 130		

Ground Zero Analysis, Inc. 1172 Kansas Avenue

Reported: 02/07/2014 15:27

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Notes And Definitions

Modesto, CA 95354

J Estimated Value (CLP Flag)

MDL Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

PQL Practical Quantitation Limit
RPD Relative Percent Difference

A01 PQL's and MDL's are raised due to sample dilution.

Page 15 of 15



Date of Report: 02/25/2014

Project Manager

Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354

Client Project:

1262.2

BCL Project:

Sullins

BCL Work Order:

1403358

Invoice ID:

B166985

Enclosed are the results of analyses for samples received by the laboratory on 2/12/2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; AK UST101



Table of Contents

Sample Information	
Chain of Custody and Cooler Receipt form	3
Laboratory / Client Sample Cross Reference	ô
Sample Results	
1403358-01 - SVE-INF Upper	
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	7
1403358-02 - SVE-INF Lower	
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	3
1403358-03 - GW-INF	
Volatile Organic Analysis (EPA Method 8260B)	9
Quality Control Reports	
Volatile Organic Analysis (EPA Method 8260B)	
Method Blank Analysis	1(
Laboratory Control Sample	
Precision and Accuracy1	12
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	
Method Blank Analysis1	3
Laboratory Control Sample 1	
Notes	
Notes and Definitions	5

Laboratories,

Ground Zero Analysis, Inc. (GZA) 1172 Kansas Avenue Modesto, CA (209) 522-4119 Fax 522-4227 E-mail: gti@gtienv.com

Page	of	

Chain of Custody

# /	4-03	358	Billing To: Ground 2	zero A	nalysis	s. Inc.			Anal	ysis	Requ	ueste	d		Laboratory:
	Project Na			Τ	Ĺ	,	T	П	Т	7			\neg	Т	BC LABS
Address:				┛			Ĺ			1					Purchase Order #
		STREET, LIVE	PHOPE, CA	╛	٦		(110-15)	(82%)							1262-703276
bal ID No.	: TO 600	100116	EDF Report: 12 Yes X No	1	≝		5			1					Turnaround Time: (S = Standard)
t GZA / G	eological T	echnics	Rpt Attn: GZA / GT	1	Gas, Other)			끯							1 day 2 day 3 day 5 day
t Addross: 11	72 Kansa	as Avenue	Type of Event: GWM Sys Montoring Drilling Other	7	ي	_	l.								Empil (ob Barrant () ID
S1410, Z1p: M(odesto, C	A 95351	Clerx Email: gti@gtienv.com	Մա	Vate	Ž	ŵ	Z X							Email Lab Report (.pdf): Yes No
Proce: (20	9) 522-41	119	Otient Fax: (209) 522-4227	檀	- i	Log	8	[<u>6</u>							Email EDF Lab Report (.zip): Yes No
Sampling	Info:	Sampled By (initials):	AD ,GZA/GT	†ૄ	Š.	ava(٩	ب ا							Mail Lab Report: ☐ Yes ☐ No
Date	Time	EDF Field ID	Sample I.D./Description / Location	No. of Containers	Matrix (Soll, Water,	Preservation Type	TPH-6, BYEX	TPH-6, BTEX, MTBE							Special Instructions / Remarks
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aived (Rolingula	_	los Did	oy Ross D				† "	<u>~</u>	11	12		2-12-14 115			
Plea	se return c	cooler / ice chest to G	Ze/ Geological Technics REC	- /	/					╼	<u> </u>	11			1-12-14 WS (LCC; (FM) Rev. 22013 2-12-14





Chain of Custody and Cooler Receipt Form for 1403358 Page 2 of 3

All samples received? Yes No.	cicontai cintact?				nents:	SHIPPING INFORMATION Federal Express UPS Hand Delivery BC Lab Field Service Other (Specify) Refrigerant: Ice Blue Ice None Other Comments:											
All samples received? Yes Am No. COC Received	All sample	SELETUNIO DE	None														
COC Received E		s containe	<u> </u>	e Ø Com	ments:				ac2/10								
COC Received	missivity: _		rs Intact?	Yes 🗗 No	 	Descrip	otion(s) mat	ch COC? Y	es No	2215							
ØYES □ NO	Temperature: (A) <u>Foom</u> °C / (C) <u>Temp</u> °C Analyst Init <u>545</u>																
SAMPLE CONTAINERS		,	,		SAMPLE	NUMBERS	1	<u>~</u>	; 	T ,							
T GENERAL MINERAL/ GENERAL	1	2	3		6	6	7	8	9	10							
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T INORGANIC CHEMICAL METALS	 ^ _		1		,					<u> </u>							
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Chain of Custody and Cooler Receipt Form for 1403358 Page 3 of 3

BC LABORATORIES INC.							15 07/						
Submission #: 14-032	568			7									
SHIPPING INF Federal Express UPS BC Lab Field Service Oth	Hand Do	elivery		SHIPPING CONTAINER Ice Chest None Box YES NO Other (Specify)									
Refrigerant: Ice Z Blue le		ne 🗆	Other 🗆	Com	ments:								
Custody Seals Ice Chest 🗅		ners 🗋 s 🗅 No 🗈		Æ Com	ments:		·	•					
All samples received? Yes Ø No□	All sampl	es contaîns	ers intact? \	es 📈 No		Descri	otion(s) mat	tch COC? Y	63. No				
COC Received ☑ YES ☐ NO	Emissivity:		Container:					Date/Tim	nit <u>SAS</u>				
SAMPLE CONTAINERS		,			SAMPLE	NUMBERS				1			
	1	2	3	4	6	6	7	8	9	10			
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ART KIT													
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1403358-01

02/25/2014 13:00 Reported:

Sullins Project:

Project Number: 1262.2

Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information

> **COC Number:** Project Number: Sampling Location:

Sullins

Sampling Point: Sampled By:

SVE-INF Upper Andrew Dorn of GTIM Receive Date:

02/12/2014 22:15 02/11/2014 12:05

Sampling Date: Sample Depth:

Lab Matrix: Sample Type: Air Vapor or Air

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): SVE-INF Upper

Matrix: GS

Sample QC Type (SACode): CS

Cooler ID:

1403358-02 **COC Number:**

Project Number:

Sampling Location:

Sampling Point: Sampled By:

Sullins

SVE-INF Lower Andrew Dorn of GTIM Receive Date:

02/12/2014 22:15 02/11/2014 14:00

Sampling Date: Sample Depth:

Lab Matrix: Air

Vapor or Air Sample Type:

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): SVE-INF Lower

Matrix: GS

Sample QC Type (SACode): CS

Cooler ID:

1403358-03 COC Number:

Project Number: Sampling Location:

Sampling Point:

Sampled By:

Sullins

GW-INF

Andrew Dorn of GTIM

Receive Date: Sampling Date: 02/12/2014 22:15 02/11/2014 14:05

Sample Depth: Lab Matrix:

Sample Type:

Water Groundwater

Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): GW-INF

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

Reported: 02/25/2014 13:00

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID:	1403358-01	Client Sampl	e Name:	Sullins, S'	Sullins, SVE-INF Upper, 2/11/2014 12:05:00PM, Andrew Dorn							
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#			
Benzene		720	ug/m3	20	2.2	EPA-TO-15	ND	A01	1			
1,1-Difluoroethane		ND	ug/m3	50	20	EPA-TO-15	ND	A01	1			
Ethylbenzene		93	ug/m3	50	2.3	EPA-TO-15	ND	A01	1			
Toluene		790	ug/m3	20	2.0	EPA-TO-15	ND	A01	1			
Total Xylenes		520	ug/m3	100	8.0	EPA-TO-15	ND	A01	1			
Total Petroleum Hydro	ocarbons	250000	ug/m3	20000	3900	EPA-TO-15	ND	A01	2			
4-Bromofluorobenzene	(Surrogate)	113	%	70 - 130 (LC	L - UCL)	EPA-TO-15			1			
4-Bromofluorobenzene	(Surrogate)	90.9	%	70 - 130 (LC	L - UCL)	EPA-TO-15			2			

			Run		QC				
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
· 1	EPA-TO-15	02/13/14	02/14/14 10:08	MJB	MS-A1	10	BXB0873		
2	EPA-TO-15	02/13/14	02/14/14 11:15	MJB	MS-A1	100	BXB0873		

Reported: 02/25/2014 13:00

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID:	1403358-02	Client Sampl	e Name:	Sullins, S	VE-INF Lo	wer, 2/11/2014	2:00:00PM, Ar	ndrew Dorn	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Benzene		ND	ug/m3	1000	110	EPA-TO-15	ND	A01	1
1,1-Difluoroethane		ND	ug/m3	2500	1000	EPA-TO-15	NĐ	A01	1
Ethylbenzene		440	ug/m3	2500	120	EPA-TO-15	ND	J,A01	1
Toluene		3200	ug/m3	1000	100	EPA-TO-15	ND	A01	1
Total Xylenes		1500	ug/m3	5000	400	EPA-TO-15	ND	J,A01	1
Total Petroleum Hydro	carbons	200000	ug/m3	100000	20000	EPA-TO-15	ND	A01	1
4-Bromofluorobenzene	(Surrogate)	124	%	70 - 130 (LC	L - UCL)	EPA-TO-15			1

			Run		_		_ '	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-TO-15	02/13/14	02/13/14 19:21	MJB	MS-A1	500	BXB0873	_

Reported: 02/25/2014 13:00

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1	403358-03	Client Sampl	e Name:	Sullins, G	W-INF, 2/1	1/2014 2:05:00	PM, Andrew D	Oorn	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene		100	ug/L	12	2.1	EPA-8260B	ND	A01	1
Ethylbenzene	11-11-1	20	ug/L	12	2.4	EPA-8260B	ND	A01	1
Methyl t-butyl ether		ND	ug/L	12	2.8	EPA-8260B	ND	A01	1
Toluene		35	ug/L	12	2.3	EPA-8260B	ND	A01	1
Total Xylenes		150	ug/L	25	9.0	EPA-8260B	ND	A01	1
p- & m-Xylenes		110	ug/L	12	7.0	EPA-8260B	ND	A01	1
o-Xylene		44	ug/L	12	2.0	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons		1700	ug/L	1200	180	Luft-GC/MS	ND	A01	1
1,2-Dichloroethane-d4 (Surr	rogate)	110	%	75 - 125 (LC	L - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		102	%	80 - 120 (LC	L - UCL)	EPA-8260B			1
i-Bromofluorobenzene (Sur	rogate)	97.6	%	80 - 120 (LCI	L - UCL)	EPA-8260B			1

			QC					
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	02/21/14	02/22/14 16:49	JMS	MS-V10	25	BXB1552	

Reported: 02/25/2014 13:00

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Method Blank Analysis

				_		
Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXB1552						
Benzene	BXB1552-BLK1	ND	ug/L	0.50	0.083	
Ethylbenzene	BXB1552-BLK1	ND	ug/L	0.50	0.098	
Methyl t-butyl ether	BXB1552-BLK1	ND	ug/L	0.50	0.11	
Toluene	8XB1552-BLK1	ND	ug/L	0.50	0.093	
Total Xylenes	BXB1552-BLK1	ND	ug/L	1.0	0.36	
p- & m-Xylenes	BXB1552-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BXB1552-BLK1	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	BXB1552-BLK1	ND	ug/L	50	7.2	
1,2-Dichloroethane-d4 (Surrogate)	BXB1552-BLK1	100	%	75 - 12	5 (LCL - UCL)	
Toluene-d8 (Surrogate)	BXB1552-BLK1	101	%	80 - 12	0 (LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BXB1552-BLK1	95.3	%	80 - 12	(LCL - UCL)	

Reported: 02/25/2014 13:00

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Laboratory Control Sample

								imits		
Constituent	QC Sample ID	Туре	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab Quals
QC Batch ID: BXB1552										
Benzene	BXB1552-BS1	LCS	30.380	25.000	ug/L	122		70 - 130		
Toluene	BXB1552-BS1	LCS	31.520	25.000	ug/L	126		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BXB1552-BS1	LCS	9.9400	10.000	ug/L	99.4		75 - 125		
Toluene-d8 (Surrogate)	BXB1552-BS1	LCS	10.250	10.000	ug/L	102		80 - 120		
4-Bromofluorobenzene (Surrogate)	BXB1552-BS1	LCS	9.8800	10.000	ug/L	98.8		80 - 120		



Reported: 02/25/2014 13:00

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Precision & Accuracy

		-									
									Cont		
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Туре	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BXB1552	Use	d client samp	ole: N								
Benzene	MS	1400811-85	ND	26.810	25.000	ug/L		107		70 - 130	
	MSD	1400811-85	ND	30.330	25.000	ug/L	12.3	121	20	70 - 130	
Toluene	MS	1400811-85	ND	28.910	25.000	ug/L		116		70 - 130	
	MSD	1400811-85	ND	32.110	25.000	ug/L	10.5	128	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1400811-85	ND	10.670	10.000	ug/L		107	_	75 - 125	
	MSD	1400811-85	ND	10.220	10.000	ug/L	4.3	102		75 - 125	
Toluene-d8 (Surrogate)	MS	1400811-85	ND	10.370	10.000	ug/L		104		80 - 120	
	MSD	1400811-85	ND	10.310	10.000	ug/L	0.6	103		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1400811-85	ND	9.8900	10.000	ug/L		98.9		80 - 120	
	MSD	1400811-85	ND	9.6100	10.000	ug/L	2.9	96.1		80 - 120	



Ground Zero Analysis, Inc. 1172 Kansas Avenue

Modesto, CA 95354

Reported: 02/25/2014 13:00

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXB0873						
Benzene	BXB0873-BLK1	ND	ug/m3	2.0	0.22	
1,1-Difluoroethane	BXB0873-BLK1	ND	ug/m3	5.0	2.0	
Ethylbenzene	BXB0873-BLK1	ND	ug/m3	5.0	0.23	
Toluene	BXB0873-BLK1	ND	ug/m3	2.0	0.20	
Total Xylenes	BXB0873-BLK1	ND	ug/m3	10	0.80	
Total Petroleum Hydrocarbons	BXB0873-BLK1	ND	ug/m3	200	39	
4-Bromofluorobenzene (Surrogate)	BXB0873-BLK1	99200	%	70 - 130	(LCL - UCL)	



Reported: 02/25/2014 13:00

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Laboratory Control Sample

	-		-		_		-			
				Spike		Percent		Control Percent	<u>Limits</u>	Lab
Constituent	QC Sample ID	Type	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BXB0873										
Benzene	BXB0873-BS1	LCS	14.565	15.974	ug/m3	91.2		70 - 130		
	BXB0873-BSD1	LCSD	14.667	15.974	ug/m3	91.8	0.7	70 - 130	30	
1,1-Difluoroethane	BXB0873-BS1	LCS	ND		ug/m3			70 - 130		
	BXB0873-BSD1	LCSD	ND		ug/m3			70 - 130	30	
Ethylbenzene	BXB0873-BS1	LCS	23.630	21.711	ug/m3	109		70 - 130		
	BXB0873-BSD1	LCSD	22.961	21.711	ug/m3	106	2.9	70 - 130	30	
Toluene	BXB0873-BS1	LCS	22.939	18.842	ug/m3	122		70 - 130		
	BXB0873-BSD1	LCSD	23.150	18.842	ug/m3	123	0.9	70 - 130	30	
Total Xylenes	BXB0873-BS1	LCS	47.394	65.132	ug/m3	72.8		70 - 130		
	BXB0873-BSD1	LCSD	49.648	65.132	ug/m3	76.2	4.6	70 - 130	30	
4-Bromofluorobenzene (Surrogate)	BXB0873-BS1	LCS	61.489	0.071574	ug/m3	85900		70 - 130		
	BXB0873-BSD1	LCSD	62.326	0.071574	ug/m3	87 100	1.4	70 - 130		



Ground Zero Analysis, Inc.

1172 Kansas Avenue Modesto, CA 95354 Reported: 02/25/2014 13:00

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Notes And Definitions

J Estimated Value (CLP Flag)

MDL Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

PQL Practical Quantitation Limit
RPD Relative Percent Difference

A01 PQL's and MDL's are raised due to sample dilution.



Date of Report: 03/03/2014

Project Manager

Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354

Client Project:

1262.2

BCL Project:

Sullins

BCL Work Order:

1404179

Invoice ID:

B167305

Enclosed are the results of analyses for samples received by the laboratory on 2/25/2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; AK UST101



Table of Contents

Sample Information	
Chain of Custody and Cooler Receipt form	. 3
Laboratory / Client Sample Cross Reference	. 5
Sample Results	
1404179-01 - GW-INF	
Volatile Organic Analysis (EPA Method 8260B)	. 6
Quality Control Reports	
Volatile Organic Analysis (EPA Method 8260B)	
Method Blank Analysis	. 7
Laboratory Control Sample	. 8
Precision and Accuracy	. 9
Notes	
Notes and Definitions	10

Chain of Custody and Cooler Receipt Form for 1404179

Ground Zero Analysis, Inc. (GZA) 1172 Kansas Avenne Modesto, CA (209) 522-4119 Fax 522-4227 E-mail: gti@gtienv.com

Chain of Custody

14 . 01.00		_						_		-11	aboratory:		
4 - 0479 Project #: Project Name:	Billing To: Ground Ze	ro Analys	is, Inc.	ন	Anai	ysis Ro	equest	ed	_	┩	S	C CA	As .
12622 Sullins Site Address:				(424)						P	urchase C	Order #	<i>167</i>
187 North L Street Live	rmore, CA			MTBE (z-7032	76
Global ID No.: TO 600 100 116 EDF Report: 1		Other)		2	11					Ŧ	urnaround	Time: (S = S	tandard
Client: GZA / Geological Technics Rpt Attn: GZA / GT		8 8	1	X						1	day 2	day 3 day	
Client Address: 1172 Kansas Avenue Type of Event: GWM	Sys Monitoring Drilling Other	ام ا				$ \cdot $				F	mail Lab E	Report (.pdf):	Nv. 5.
City, State, Zip: Modesto, CA 95351 Client Email: gti@g	tienv.com	nere Wate	Ę	8	11	$ \cdot $			- [Lab Report (.zip	Yes No
Client Phone: (209) 522-4119 Client Fax: (209) 5	522-4227	of S	gou	প্	\perp	$ \cdot $					lail Lab Re		
Sampling Info: Sampled By (initials): 4.0 , G	ZA/GT	ဗို နို	eva ava	Hd						٣	iali Lab Ne	port:	Yes No
	/Description / Location	No. of Containers Matrix (Soil, Water, Gas,	Preservation Type	F	\perp				1	-		Special Instru	ctions / Remarks
2/25/14 1305 GW-INF		4 W		l y	11	\top	\dashv	\dashv	+	+			
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Signature Received / (Rollinguished by		Print N	ame					Con	прап	ıy		Date:	Time:
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Received / Relinquished by:	Rass Dide	4_				B	CLA	B				2.25.14	
12000 Nackey	Ross Dide					B	CL	43	_			2.20.14	1510
Please return cooler / ice chest to GZA / Geological T	echnics P.EC.	2	-25-1	4 18	3215	R	EL- /	VAS:	3	1	20 115	285 (+010	275 149 ev. 2/2013



Chain of Custody and Cooler Receipt Form for 1404179 Page 2 of 2

Submission #: 14-04179	1.1		_	_						
SHIPPING INF	ORMATION	<u>_</u>		S	HIPPING	CONTAI	NER		FREE LIQ	UID
Federal Express	Hand De	ivery		Ice Che	stØ	None	Box 🗆	Y	res d n	0 🗆
Federal Express □ UPS □ BC Lab Field Service O	er 🗆 (Specify	r)		Oth	er □ (Spe	clfy)				
		·						_		
Refrigerant: Ice/ Blue I		ne 🗆 🤺		Comn	nents:					
Custody Seals ice Chest []	Intact? Ya	-D∈No -E		A Com	· :			•		
All samples received? Yes Ø No □	All sample	s containe	rs intact? `	res No	َ ت	Descrip	tion(s) mate	h COC? Y	es to No	D .
	Emissivity: (Date/Tim	• <u>2-25-</u>	145
COC Received Ø YES □ NO								A-aluan I	nit KIO	2155
ا TES المِن TES	Temperatu	re: (A) <u></u>	4	_°C /	(c) 2.	<u> </u>	°C	Analyst	mr NO	
		``			SAMPLE	NUMBERS		3 953	·	
SAMPLE CONTAINERS	1	2	3	4	5	6	7	8	9	10
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PT NITROGEN FORMS			 				. :			
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PT TOTAL ORGANIC CARBON	_				,	<u> </u>				
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PA PHENOLICS	_				-			·		
MANUAL TRAVEL BLANK										
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OIL SLEEVE			<u> </u>				├──┤			
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PLASTIC BAG				-		-	 			-
TERROUS IRON		·				† .				
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MART KIT	-					-				
Summa Canister			l			L	<u> </u>			

Reported: 03/03/2014 11:15

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information

1404179-01 COC Number:

Project Number: Sampling Location: Sullins

Sampling Point:

Sampled By:

GW-INF

Andrew Dorn of GTIM

Receive Date:

02/25/2014 21:55

Sampling Date:

02/25/2014 13:05

Sample Depth:

Lab Matrix:

:: Water rpe: Groundwater

Sample Type: Delivery Work Order:

Global ID: T0600100116

Location ID (FieldPoint): GW-INF

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

Reported: 03/03/2014 11:15

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID:	1404179-01	Client Samp	e Name:	Sullins, G	Sullins, GW-INF, 2/25/2014 1:05:00PM, Andrew Dorn							
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #			
Benzene		150	ug/L	5.0	0.83	EPA-8260B	ND	A01	1			
Ethylbenzene		27	ug/L	0.50	0.098	EPA-8260B	ND		2			
Methyl t-butyl ether		4.2	ug/L	0.50	0.11	EPA-8260B	ND		2			
Toluene		45	ug/L	0.50	0.093	EPA-8260B	ND		2			
Total Xylenes		180	ug/L	1.0	0.36	EPA-8260B	ND		2			
p- & m-Xylenes		120	ug/L	0.50	0.28	EPA-8260B	ND		2			
o-Xylene		56	ug/L	0.50	0.082	EPA-8260B	ND		2			
Total Purgeable Petroleu Hydrocarbons	ım	1700	ug/L	50	7.2	Luft-GC/MS	ND		2			
1,2-Dichloroethane-d4 (S	urrogate)	104	%	75 - 125 (LC	L - UCL)	EPA-8260B			1			
1,2-Dichloroethane-d4 (S	urrogate)	106	%	75 - 125 (LC	L - UCL)	EPA-8260B			2			
Toluene-d8 (Surrogate)		95.8	%	80 - 120 (LC	L - UCL)	EPA-8260B			1			
Toluene-d8 (Surrogate)		98.2	%	80 - 120 (LC	L - UCL)	EPA-8260B			2			
4-Bromofluorobenzene (S	Surrogate)	99.8	%	80 - 120 (LC	L - UCL)	EPA-8260B			1			
4-Bromofluorobenzene (S	Surrogate)	104	%	80 - 120 (LC	L - UCL)	EPA-8260B			2			

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260B	02/26/14	02/28/14 11:47	JMS	MS-V10	10	BXB1901
2	EPA-8260B	02/26/14	02/27/14 08:41	JMS	MS-V10	1	BXB1901

Reported: 03/03/2014 11:15

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Method Blank Analysis

	•			•		
Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXB1901						
Benzene	BXB1901-BLK1	ND	ug/L	0.50	0.083	
Ethylbenzene	BXB1901-BLK1	ND	ug/L	0.50	0.098	
Methyl t-butyl ether	BXB1901-BLK1	ND	ug/L	0.50	0.11	
Toluene	BXB1901-BLK1	ND	ug/L	0.50	0.093	
Total Xylenes	BXB1901-BLK1	ND	ug/L	1.0	0.36	
p- & m-Xylenes	BXB1901-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BXB1901-BLK1	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	BXB1901-BLK1	ND	ug/L	50	7.2	
1,2-Dichloroethane-d4 (Surrogate)	BXB1901-BLK1	102	%	75 - 12	5 (LCL - UCL)	
Toluene-d8 (Surrogate)	BXB1901-BLK1	101	%	80 - 12	(LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BXB1901-BLK1	97.8	%	80 - 12	(LCL - UCL)	
					, ,	

Reported: 03/03/2014 11:15

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Laboratory Control Sample

	•				-		•			
						_		Control L	imits	
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Type	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quais
QC Batch ID: BXB1901						_				
Benzene	BXB1901-BS1	LCS	27.390	25.000	ug/L	110		70 - 130		
Toluene	BXB1901-BS1	LCS	27.670	25.000	ug/L	111		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BXB1901-BS1	LCS	10.330	10.000	ug/L	103		75 - 125		
Toluene-d8 (Surrogate)	BXB1901-BS1	LCS	10.160	10.000	ug/L	102		80 - 120		
4-Bromofluorobenzene (Surrogate)	BXB1901-BS1	LCS	9.8400	10.000	ug/L	98.4		80 - 120		

1172 Kansas Avenue Modesto, CA 95354

Ground Zero Analysis, Inc.

Reported: 03/03/2014 11:15

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Precision & Accuracy

								<u>, </u>				
									Cont	rol Limits		
		Source	Source		Spike			Percent		Percent	Lab	
Constituent	Туре	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals	
QC Batch ID: BXB1901	Use	d client samp	ole: N									
Benzene	 MS	1404009-27	ND	23.030	25.000	ug/L		92.1		70 - 130		
	MSD	1404009-27	ND	26.320	25.000	ug/L	13.3	105	20	70 - 130		
Toluene	MS	1404009-27	ND	22.500	25.000	ug/L		90.0		70 - 130		
	MSD	1404009-27	ND	25.400	25.000	ug/L	12.1	102	20	70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	MS	1404009-27	ND	10.130	10.000	ug/L		101		75 - 125		
	MSD	1404009-27	ND	10.130	10.000	ug/L	0	101		75 - 125		
Toluene-d8 (Surrogate)	MS	1404009-27	ND	9.8500	10.000	ug/L		98.5		80 - 120		
	MSD	1404009-27	ND	9.9500	10.000	ug/L	1.0	99.5		80 - 120		
4-Bromofluorobenzene (Surrogate)	MS	1404009-27	ND	9.9400	10.000	ug/L		99.4		80 - 120		
	MSD	1404009-27	ND	9.7400	10.000	ug/L	2.0	97.4		80 - 120		



Ground Zero Analysis, Inc.

1172 Kansas Avenue Modesto, CA 95354 Reported: 03/03/2014 11:15

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Notes And Definitions

MDL Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

PQL Practical Quantitation Limit
RPD Relative Percent Difference

A01 PQL's and MDL's are raised due to sample dilution.

Date of Report: 03/26/2014

Project Manager

Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354

Client Project:

5262

BCL Project:

Sullins

BCL Work Order:

1406216

Invoice ID:

B169400

Enclosed are the results of analyses for samples received by the laboratory on 3/19/2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; AK UST101



Table of Contents

Sample Information	
Chain of Custody and Cooler Receipt form	3
Chain of Custody and Cooler Receipt formLaboratory / Client Sample Cross Reference	6
Sample Results	
1406216-01 - GW-INF	
Volatile Organic Analysis (EPA Method 8260B)	7
1406216-02 - SVE-INF Lower	
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	8
Quality Control Reports	
Volatile Organic Analysis (EPA Method 8260B)	
Method Blank Analysis	9
Laboratory Control Sample	10
Precision and Accuracy	11
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	
Method Blank Analysis	
Laboratory Control Sample	13
Notes	
Notes and Definitions	14

Page 1 of 3

	Wasi	- G	round Zero Anal Geological 7 1172 Kansas Modesto (209) 522-4119 F	echnics Avenue , CA #	14-062	216							Page Chain	of Custod)	
		, .	E-mail: gti@g	tions com	illing To: Ground Zero	Analysi	s, Inc.		Analys	is Reques	ted	Laboratory:	(LAb	5.	7
	Project #: 5 2 62 Site Address: 1 8 7 Global ID No. Chent: GZA / Ge Chent Address: 11 City, Stato, Zip: MG Calent Phone: (20)	Nor eological T 72 Kansa odesto, C	HINS HL 'L' 5+ Technics as Avenue A 95351	EDF Report: Yes Rep Alen: GZA(GT) Type of Event: GWM (Sys) Culent Email: gti @ gtienv. Client Face (209) 522-42	Monitaring Officer	No. of Containers Matrix (Soll, Water, Gas, Other)	Preservation Type	6 4 BTEX (B266) -6 4 BTEX (TO-15)				Purchase O / 2 6 2 Turnaround 1 day 2 Email Lab F	rder # 2 - 70 3 2 7 Time: S = Standay 3 day Report (.pdf): Lab Report (.zip):	76	
	Sampling		Sampled By (initials):		ription / Location	No. of C	reserve	Hot.					Special Instruction	ons / Remarks	
-1-2	3/18/14 3/16/14	1314		GW-IN SUE-INF		4 3 1 G		X							
		CI	KBY DIS	TRIBUTION UB-OUT C											
						+	+	+	+		++				
	Received / Resing	دا دسه	signature / M	1	MARK GARY GARY BOX	Pie	Name Name (GAN)			130	Comp GZ CAh		Date: 3-19-14 3-19-14 3-19-14	7155 1155	
	Pie	ase return	Lang Bogon	GZA / Geological Techn		_	3-19-14	118:	30 R		\$0 3.	19-14 2205		3. 17. 14 VAOS 2/2013	



c. 1949

Chain of Custody and Cooler Receipt Form for 1406216 Page 2 of 3

Submission #: .14-062 SHIPPING INF Federal Express UPS BC Lab Field Service Other	FORMATIO	- II	<u>:</u>	Ice Ch	est 🗷	CONTA None D	Box 🗆		FREE LIQU	
Refrigerant: Ice Z Blue I	ce 🗆 No	ne 🗆	Other 🗆	Com	nents:					
Custody Seals lice Chest : Intent? Yes II No II	Conta	Iners ⊡ ės ⊡ No ⊡	Non	Con	ments:	. :				
All samples received? Yes Mo D	All samp	les containe	rs Intact?	Yes (2) No	ū	Descrip	tion (s) ma	tch COC?	Yas D No C]
COC Received	Emissivity:							1	ne <u>3.19.14</u>	_
y2 120	Temperate	ure: (A)_	<u> </u>	°C /	(C)_	. 1	٠ċ	Analyst	Init <u>SAS</u>	
						NUMBERS				
SAMPLE CONTAINERS	1	2	3	4	. 6	6	7	8	9	10
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T CHEMICAL OXYGEN DEMAND	_		<u> </u>	-				 		\neg
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T RPA 515.1/8150						<u> </u>				
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T EPA 632		_								
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LASTIC BAG	-									
ERROUS IRON			 -			 			-+	
NCORE						 -				
MART KIT	1						:			





Chain of Custody and Cooler Receipt Form for 1406216 Page 3 of 3

BC LABORATORIES INC. Submission #: 14-062 SHIPPING INFO Federal Express □ UPS □ BC Lab Field Service Ø Other		N elivery	JLEK REC	S Ice Ch	HIPPING est 🗆	None 🗇	NER &		FREE LIC	UID
Refrigerant: Ice □ Blue Ice		ne 🗹	Other 🛘	Comr	nents:					
Custody Seals loe Chest 16	(Contra	ners (De-	None	Ø Com	merits:					
All samples received? Yes No.D	All sample	es contaîne	rs intact? Y	es Ø No	o	Descrip	tion(s) mat	ch COC? Y	es & No	
COC Received ☑ YES □ NO	Emissivity:		Container:	4			<u>«С</u>	3	ne <u>3 ·] 9 · 1 ·</u> nit <u>_ 545</u>	
	Tomporata		PCOM	_						
SAMPLE CONTAINERS	1	2	,	4	SAMPLE I	6 6	7	В .	9	10
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I INORGANIC CHEMICAL METALS	╀	├		ļ						_
C CYANIDE										
NITROGEN FORMS	+-	-	-				-			-
TOTAL SULFIDE	 									
z NITRATE / NITRITE	1							-		_
TOTAL ORGANIC CARBON										
TOX			-					-		
CHEMICAL OXYGEN DEMAND							 ,			
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EPA 413.1, 413.2, 418.1										
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nd VOA VIAL- 504							-			
EPA 508/608/8080										
EPA 515.1/8150										
EPA 525		,								
EPA 525 TRAVEL BLANK										
mi RPA 547		,								
ml EPA 531.1										
EPA 548										
EPA 549										
EPA 632										
EPA 8015M										
AMBER										
_ JAR	L									
Z. JAR	 									
SLEEVE	<u> </u>			-						
VIAL	L									
STIC BAG										
ROUS IRON										
CORE '										
ART KIT										
nma Canister										

Reported:

03/26/2014 11:23

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information

1406216-01

COC Number:

Project Number:

Sullins

Sampling Location:

Sampling Point: Sampled By:

GW-INF

Andrew Dorn of GTIM

Receive Date:

03/19/2014 22:05

Sampling Date:

03/18/2014 13:14

Sample Depth: Lab Matrix:

Water

Sample Type:

Groundwater

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): GW-INF

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1406216-02

COC Number:

Project Number: Sullins

Sampling Location: Sampling Point:

Sampled By:

SVE-INF Lower

Andrew Dorn of GTIM

Receive Date:

03/19/2014 22:05

Sampling Date:

03/18/2014 13:37

Sample Depth:

Air Lab Matrix:

Vapor or Air Sample Type:

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): SVE-INF Lower

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

Page 6 of 14

Reported: 03/26/2014 11:23

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1406216-01	Client Samp	le Name:	Sullins, G	W-INF, 3/	18/2014 1:14:00	PM, Andrew D	Oorn	
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	61	ug/L	1.0	0.17	EPA-8260B	ND	A01	1
Ethylbenzene	18	ug/L	1.0	0.20	EPA-8260B	ND	A01	1
Toluene	14	ug/L	1.0	0.19	EPA-8260B	ND	A01	1
Total Xylenes	80	ug/L	2.0	0.72	EPA-8260B	ND	A01	1
p- & m-Xylenes	58	ug/L	1.0	0.56	EPA-8260B	ND	A01	1
o-Xylene	22	ug/L	1.0	0.16	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons	2600	ug/L	100	14	Luft-GC/MS	ND	A01	1
1,2-Dichloroethane-d4 (Surrogate)	107	%	75 - 125 (LC	L - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	97.8	%	80 - 120 (LC	L - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	108	%	80 - 120 (LC	L - UCL)	EPA-8260B		, , , , , , , , , , , , , , , , , , , ,	1

			Run				QC
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260B	03/20/14	03/21/14 08:23	JMS	MS-V10	2	BXC1648

Reported: 03/26/2014 11:23

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID:	1406216-02	Client Sampl	e Name:	Sullins, S'	VE-INF Lo	wer, 3/18/2014	1:37:00PM, Ar	ndrew Dorn	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Benzene		ND	ug/m3	20	2.2	EPA-TO-15	ND	A01	1
1,1-Difluoroethane		ND	ug/m3	50	20	EPA-TO-15	ND	A01	1
Ethylbenzene		11	ug/m3	50	2.3	EPA-TO-15	ND	J,A01	1
Toluene		10	ug/m3	20	2.0	EPA-TO-15	ND	J,A01	1
Total Xylenes		41	ug/m3	100	8.0	EPA-TO-15	ND	J,A01	1
Total Petroleum Hydro	carbons	890	ug/m3	2000	390	EPA-TO-15	ND	J,A01	1
4-Bromofluorobenzene	(Surrogate)	105	%	70 - 130 (LC	L - UCL)	EPA-TO-15			1

			Run					
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-TO-15	03/20/14	03/20/14 23:36	MJB	MS-A1	10	BXC1642	

Reported: 03/26/2014 11:23

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXC1648						_
Benzene	BXC1648-BLK1	ND	ug/L	0.50	0.083	
Ethylbenzene	BXC1648-BLK1	ND	ug/L	0.50	0.098	
Toluene	BXC1648-BLK1	ND	ug/L	0.50	0.093	
Total Xylenes	BXC1648-BLK1	ND	ug/L	1.0	0.36	
p- & m-Xylenes	BXC1648-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BXC1648-BLK1	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	BXC1648-BLK1	ND	ug/L	50	7.2	
1,2-Dichloroethane-d4 (Surrogate)	BXC1648-BLK1	108	%	75 - 12	5 (LCL - UCL)	
Toluene-d8 (Surrogate)	BXC1648-BLK1	98.1	%	80 - 12	0 (LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BXC1648-BLK1	101	%	80 - 12	0 (LCL - UCL)	

Reported: 03/26/2014 11:23

Project: Sullins

Project Number: 5262
Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Laboratory Control Sample

_										
Constituent	QC Sample ID	Туре	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab Quals
QC Batch ID: BXC1648										_
Benzene	BXC1648-BS1	LCS	24.100	25.000	ug/L	96.4		70 - 130		
Toluene	8XC1648-BS1	LCS	22.230	25.000	ug/L	88.9		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BXC1648-BS1	LCS	9.8600	10.000	ug/L	98.6		75 - 125		
Toluene-d8 (Surrogate)	BXC1648-BS1	LCS	9.8800	10.000	ug/L	98.8		80 - 120		
4-Bromofluorobenzene (Surrogate)	BXC1648-BS1	LCS	10.100	10.000	ug/L	101		80 - 120		

Reported: 03/26/2014 11:23

Project: Sullins
Project Number: 5262

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Precision & Accuracy

	·	•		·		_			Cont	rol Limits	
	_	Source	Source		Spike	11.24	DDD	Percent	DDD	Percent	Lab
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BXC1648	Use	d client samp	ole: N					_			
Benzene	MS	1404104-66	ND	24.270	25.000	ug/L		97.1		70 - 130	
	MSD	1404104-66	ND	23.760	25.000	ug/L	2.1	95.0	20	70 - 130	
Toluene	MS	1404104-66	ND	22.130	25.000	ug/L		88.5		70 - 130	
	MSD	1404104-66	ND	21.400	25.000	ug/L	3.4	85.6	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1404104-66	ND	10.200	10.000	ug/L		102		75 - 125	
	MSD	1404104-66	ND	10.470	10.000	ug/L	2.6	105		75 - 125	
Toluene-d8 (Surrogate)	MS	1404104-66	ND	9.8500	10.000	ug/L		98.5		80 - 120	
	MSD	1404104-66	ND	9.8300	10.000	ug/L	0.2	98.3		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1404104-66	ND	10.340	10.000	ug/L		103		80 - 120	
	MSD	1404104-66	ND	10.410	10.000	ug/L	0.7	104		80 - 120	

Ground Zero Analysis, Inc.

1172 Kansas Avenue Modesto, CA 95354 Reported: 03/26/2014 11:23

Project: Sullins
Project Number: 5262

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Method Blank Analysis

				-		
Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXC1642		_				
Benzene	BXC1642-BLK1	ND	ug/m3	2.0	0.22	
1,1-Difluoroelhane	BXC1642-BLK1	ND	ug/m3	5.0	2.0	
Ethylbenzene	BXC1642-BLK1	ND	ug/m3	5.0	0.23	
Toluene	BXC1642-BLK1	ND	ug/m3	2.0	0.20	
Total Xylenes	BXC1642-BLK1	ND	ug/m3	10	0.80	
Total Petroleum Hydrocarbons	BXC1642-BLK1	ND	ug/m3	200	39	
4-Bromofluorobenzene (Surrogate)	BXC1642-BLK1	112	%	70 - 130 (LCL - UCL)		

Reported: 03/26/2014 11:23

Project: Sullins
Project Number: 5262

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Laboratory Control Sample

	•		-		-					
Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control I Percent Recovery	imits RPD	Lab Quals
Ooristituerit	QO Oampic ib	Type	Result	Level	Units	Recovery	NI D	Recovery	10, 5	Quais
QC Batch ID: BXC1642				_				_		
Benzene	BXC1642-BS1	LCS	18.498	15.974	ug/m3	116		70 - 130		
	BXC1642-BSD1	LCSD	18.740	15.974	ug/m3	117	1.3	70 - 130	30	
1,1-Difluoroethane	BXC1642-BS1	LCS	ND		ug/m3			70 - 130		
	BXC1642-BSD1	LCSD	ND		ug/m3			70 - 130	30	
Ethylbenzene	BXC1642-BS1	LCS	37.976	21.711	ug/m3	175		70 - 130		
	BXC1642-BSD1	LCSD	37.099	21.711	ug/m3	171	2.3	70 - 130	30	
Toluene	BXC1642-BS1	LCS	21.510	18.842	ug/m3	114		70 - 130		-
	BXC1642-BSD1	LCSD	21.555	18.842	ug/m3	114	0.2	70 - 130	30	
Total Xylenes	BXC1642-BS1	LCS	108.72	65.132	ug/m3	167		70 - 130		
	BXC1642-BSD1	LCSD	105.36	65.132	ug/m3	162	3.1	70 - 130	30	
4-Bromofluorobenzene (Surrogate)	BXC1642-BS1	LCS	78.123	71.574	ug/m3	109		70 - 130		
	BXC1642-BSD1	LCSD	72.655	71.574	ug/m3	102	7.3	70 - 130		

Ground Zero Analysis, Inc.

1172 Kansas Avenue Modesto, CA 95354 Reported: 03/26/2014 11:23

Project: Sullins
Project Number: 5262

Project Manager: Project Manager

Notes And Definitions

Estimated Value (CLP Flag)

MDL Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

PQL Practical Quantitation Limit
RPD Relative Percent Difference

A01 PQL's and MDL's are raised due to sample dilution.

Date of Report: 04/11/2014

Project Manager

Ground Zero Analysis, Inc. 1172 Kansas Avenue

Modesto, CA 95354

Client Project:

5262

BCL Project:

Sullins

BCL Work Order:

1407073

Invoice ID:

B170788

Enclosed are the results of analyses for samples received by the laboratory on 4/1/2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; AK UST101



Table of Contents

Sample Information	
Chain of Custody and Cooler Receipt form	3
Chain of Custody and Cooler Receipt form	. 6
Sample Results	
1407073-01 - SVE-INF Lower	
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	. 7
1407073-02 - GW-INF	
Volatile Organic Analysis (EPA Method 8260B)	8
Quality Control Reports	
Volatile Organic Analysis (EPA Method 8260B)	
Method Blank Analysis	. 9
Laboratory Control Sample	. 10
Precision and Accuracy	. 11
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	
Method Blank Analysis	. 12
Laboratory Control Sample	. 13
Notes	
Notes and Definitions	14

Page 1 of 3

Chain of Custody and Cooler Receipt Form for 1407073

GROUND ZERO

1172 Kansas Avenue Modesto, CA (209) 522-4119 Fax 522-4227

Chain of Custody

#14-07073	Billing To: Ground Zero	Analysis, Inc.	Analysi	s Requested	BC GR	/
Project #: Project Name: \$262 \$\infty \ell \lambda \la	EDF Report: D Yes ANO Fipit Attr: Ground Zero Anarysts, Inc. Type of Event: GWA Sys Monstoring Drilling Other Clions Email: gza@groundzeroanalysis.com Clions Fas (209) 522-4227	No. of Containers Matrix (Soil, Water, Gas, Other) Preservation Type	BTEX & TM-G (TO-15) BTEX & TM-G (8260)	Ti E	urnaround Time: S Starday 2 day 3 day mail Lab Report (.pdf): mail EDF Lab Report (.zip): fail Lab Report: Special Instruction	ndard 5 day A-Yes INO IYes ANO Yes ANO
Date Time EDF Field ID	SVE-INF LOWER	1 G MA				
24/1/14 1115	GW-INF	6 W HC				
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Received (Relinquished by Ross) word	log RoseDi RoseDid	DU DU		BC LAB	4.1.19	1710

REL. 1980 return cooler / ice chest to Ground Zero Analysis, Inc.

Rev. 3/2014 4-1-14 2220



Chain of Custody and Cooler Receipt Form for 1407073 Page 2 of 3

Submission #: 14-070. SHIPPING INFO Federal Express UPS BC Lab Field Service Other	ORMATIO Hand D	elivery		Ice Che	HIPPING est □ er □ (Spe	None 🗆	Box □		FREE LIQ (ES [] N	
Refrigerant: Ice ☐ Blue Ic	e 🗆 No	ne 🗷 👚	Other []	Comn	nents:					
Custody Seals lice Chest I	Coni Union	ipersiO	Моле	Com	ments:					
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COC Received ☑ YES □ NO	Emissivity:			•		•		l	e <u>4.1.14</u> nit <u>545</u>	<u></u>
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PT EPA 515.1/8150										
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Chain of Custody and Cooler Receipt Form for 1407073 Page 3 of 3

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BO Lab Field Service & Ott	191	(Speci	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		011	ier ⊔ (Sp	ecity)		-1		
Refrigerant: Ice 🗷 Blue I	ce 🗆	No	one 🗆	Other 🗆	Com	ments:					
Custody Seals ice Chest ⊑		Conta	iners 🖹	None	Con				-10°		
All samples received? Yes No 🗆	A	li sampi	les contain	ers Intact?	res No	ü	Descrip	tion(s) mate	h COC?	Yes No	
COC Received ☑ YES □ NO				Container							
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Reported: 04/11/2014 17:33

Cooler ID:

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information 1407073-01 COC Number: Receive Date: 04/01/2014 22:20 **Project Number:** Sullins Sampling Date: 04/01/2014 10:50 Sampling Location: Sample Depth: SVE-INF Lower Sampling Point: Lab Matrix: Air Andrew Dorn of GTIM Sampled By: Sample Type: Vapor Biank Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): SVE-INF Lower Matrix: GS Sample QC Type (SACode): CS Cooler ID: 1407073-02 COC Number: Receive Date: 04/01/2014 22:20 04/01/2014 11:15 Project Number: Sullins Sampling Date: Sampling Location: Sample Depth: **GW-INF** Water Sampling Point: Lab Matrix: Andrew Dorn of GTIM Sampled By: Groundwater Sample Type: Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): GW-INF Matrix: W Sample QC Type (SACode): CS

Reported: 04/11/2014 17:33

Project: Sullins

Project Number: 5262
Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID:	1407073-01	Client Sampl	e Name:	Sullins, S	Sullins, SVE-INF Lower, 4/1/2014 10:50:00AM, Andrew Dorn							
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #			
Benzene		16000	ug/m3	1000	110	EPA-TO-15	ND	A01	1			
1,1-Difluoroethane		ND	ug/m3	500	200	EPA-TO-15	ND	A01	2			
Ethylbenzene		4600	ug/m3	500	23	EPA-TO-15	ND	A01	2			
Toluene		1800	ug/m3	200	20	EPA-TO-15	ND	A01	2			
Total Xylenes		10000	ug/m3	1000	80	EPA-TO-15	ND	A01	2			
Total Petroleum Hydroca	rbons	85000	ug/m3	20000	3900	EPA-TO-15	ND	A01	2			
4-Bromofluorobenzene (S	urrogate)	109	%	70 - 130 (LC	L - UCL)	EPA-TO-15			1			
4-Bromofluorobenzene (S	urrogate)	115	%	70 - 130 (LC	L - UCL)	EPA-TO-15			2			

		-	Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-TO-15	04/04/14	04/04/14 21:15	МЈВ	MS-A1	500	BXD0307	
2	EPA-TO-15	04/04/14	04/04/14 13:28	MJB	MS-A1	100	BXD0307	

Reported: 04/11/2014 17:33

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID:	1407073-02	Client Sampl	e Name:	Sullins, G	W-INF, 4/1	/2014 11:15:00 <i>A</i>	M, Andrew D	orn	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Benzene		19	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene		4.9	ug/L	0.50	0.098	EPA-8260B	ND		1
Toluene		2.6	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes		19	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes		15	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene		4.4	ug/L	0.50	0.082	EPA-8260B	ND		1
Total Purgeable Petroleun Hydrocarbons	ı	340	ug/L	50	7.2	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Sur	rogate)	109	%	75 - 125 (LC	L - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		97.7	%	80 - 120 (LC	L - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Su	rrogate)	99.7	%	80 - 120 (LC	L - UCL)	EPA-8260B	_		1

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260B	04/07/14	04/08/14 09:30	JMS	MS-V10	1	BXD0723

Reported: 04/11/2014 17:33

Project: Sullins
Project Number: 5262

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXD0723		_		-		
Benzene	BXD0723-BLK1	ND	ug/L	0.50	0.083	
Ethylbenzene	BXD0723-BLK1	ND	ug/L	0.50	0.098	
Toluene	BXD0723-BLK1	ND	ug/L	0.50	0.093	
Total Xylenes	BXD0723-BLK1	ND	ug/L	1.0	0.36	
p- & m-Xylenes	BXD0723-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BXD0723-BLK1	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	BXD0723-BLK1	ND	ug/L	50	7.2	
1,2-Dichloroethane-d4 (Surrogate)	BXD0723-BLK1	103	%	75 - 12	5 (LCL - UCL)	
Toluene-d8 (Surrogate)	BXD0723-BLK1	99.7	%	80 - 12	(LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BXD0723-BLK1	98.9	%	80 - 12	(LCL - UCL)	

Reported: 04/11/2014 17:33

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Laboratory Control Sample

	•		•		•		•			
					·			Control	Limits	<u> </u>
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Type	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BXD0723										
Benzene	BXD0723-BS1	LCS	31.110	25.000	ug/L	124		70 - 130		
Toluene	BXD0723-BS1	LCS	31.540	25.000	ug/L	1 26		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BXD0723-BS1	LCS	10.030	10.000	ug/L	100		75 - 125		
Toluene-d8 (Surrogate)	BXD0723-BS1	LCS	9.8400	10.000	ug/L	98.4		80 - 120		
4-Bromofluorobenzene (Surrogate)	BXD0723-BS1	LCS	10.180	10.000	ug/L	102		80 - 120		

Reported: 04/11/2014 17:33

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Precision & Accuracy

									Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BXD0723	Use	d client samp	ole: N								
Benzene	— мs	1407468-11	ND	31.890	25.000	ug/L		128		70 - 130	
	MSD	1407468-11	ND	30.810	25.000	ug/L	3.4	123	20	70 - 130	
Toluene	MS	1407468-11	ND	31.850	25.000	ug/L		127		70 - 130	
	MSD	1407468-11	ND	30.190	25.000	ug/L	5.4	121	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1407468-11	ND	10.430	10.000	ug/L		104		75 - 125	
	MSD	1407468-11	ND	10.390	10.000	ug/L	0.4	104		75 - 125	
Toluene-d8 (Surrogate)	MS	1407468-11	ND	10.080	10.000	ug/L	_	101		80 - 120	
	MSD	1407468-11	ND	10.010	10.000	ug/Ł	0.7	100		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1407468-11	ND	9.6800	10.000	ug/L		96.8		80 - 120	
	MSD	1407468-11	ND	9.6200	10.000	ug/L	0.6	96.2		80 - 120	

Reported: 04/11/2014 17:33

Project: Sullins
Project Number: 5262

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXD0307						
Benzene	BXD0307-BLK1	ND	ug/m3	2.0	0.22	
1,1-Difluoroethane	BXD0307-BLK1	ND	ug/m3	5.0	2.0	
Ethylbenzene	BXD0307-BLK1	ND	ug/m3	5.0	0.23	
Toluene	BXD0307-BLK1	ND	ug/m3	2.0	0.20	
Total Xylenes	BXD0307-BLK1	ND	ug/m3	10	0.80	
Total Petroleum Hydrocarbons	8XD0307-BLK1	ND	ug/m3	200	39	
4-Bromofluorobenzene (Surrogate)	BXD0307-BLK1	118	%	70 - 13	0 (LCL - UCL)	

Reported: 04/11/2014 17:33

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Laboratory Control Sample

								Control	<u>_imits</u>	
Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab Quals
QC Batch ID: BXD0307										_
Benzene	BXD0307-BS1	LCS	17.242	15.974	ug/m3	108		70 - 130		
	BXD0307-BSD1	LCSD	17.600	15.974	ug/m3	110	2.1	70 - 130	30	
1,1-Difluoroethane	BXD0307-BS1	LCS	ND		ug/m3			70 - 130		
	BXD0307-BSD1	LCSD	ND		ug/m3			70 - 130	30	
Ethylbenzene	BXD0307-BS1	LCS	28.107	21.711	ug/m3	129		70 - 130		
	BXD0307-BSD1	LCSD	28.159	21.711	ug/m3	130	0.2	70 - 130	30	
Toluene	BXD0307-BS1	LCS	20.595	18.842	ug/m3	109		70 - 130		
	BXD0307-BSD1	LCSD	21.013	18.842	ug/m3	112	2.0	70 - 130	30	
Total Xylenes	BXD0307-BS1	LCS	84.459	65.132	ug/m3	130		70 - 130		
our rysonou	BXD0307-BSD1	LCSD	83.998	65.132	ug/m3	129	0.5	70 - 130	30	
-Bromofluorobenzene (Surrogate)	BXD0307-BS1	LCS	83.154	71.574	ug/m3	116		70 - 130		
	BXD0307-BSD1	LCSD	80.592	71.574	ug/m3	113	3.1	70 - 130		

Ground Zero Analysis, Inc. 1172 Kansas Avenue Reported: 04/11/2014 17:33

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Notes And Definitions

Modesto, CA 95354

MDL Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

PQL Practical Quantilation Limit
RPD Relative Percent Difference

A01 PQL's and MDL's are raised due to sample dilution.



Date of Report: 04/21/2014

Project Manager

Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354

Client Project:

5262

BCL Project:

Sullins

BCL Work Order:

1408584

Invoice ID:

B171371

Enclosed are the results of analyses for samples received by the laboratory on 4/16/2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; AK UST101



Table of Contents

Sample Information	
Chain of Custody and Cooler Receipt formLaboratory / Client Sample Cross Reference	3
Laboratory / Client Sample Cross Reference	6
Sample Results	
1408584-01 - SVE-INF	
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	7
1408584-02 - GW-INF	
Volatile Organic Analysis (EPA Method 8260B)	8
Quality Control Reports	
Volatile Organic Analysis (EPA Method 8260B)	
Method Blank Analysis	9
Laboratory Control Sample	10
Precision and Accuracy	11
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	
Method Blank Analysis	12
Laboratory Control Sample	13
Notes	
Notes and Definitions	14

Report ID: 1000229327

Laboratories, Inc.

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1408584

Page 1 of 3

Chain of Cuetody

E-mail: gza@groundzeroanalysis.com (209) 522-4119 Fax 522-4227 Modesto, CA 1172 Kansas Avenue

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Chain of Custody and Cooler Receipt Form for 1408584 Page 2 of 3

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Report ID: 1000229327



Chain of Custody and Cooler Receipt Form for 1408584 Page 3 of 3

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Refrigerant: Ice S. Blue Id	ce □ N	one 🗆	Other D	7 Com	ments:					
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Ground Zero Analysis, Inc.

1172 Kansas Avenue Modesto, CA 95354 Reported:

04/21/2014 13:53

Cooler ID:

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information 1408584-01 04/16/2014 21:40 Receive Date: **COC Number:** Sullins Sampling Date: 04/15/2014 12:55 Project Number: Sample Depth: Sampling Location: SVE-INF Sampling Point: Lab Matrix: Air **GTIM** Vapor or Air Sampled By: Sample Type: Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): SVE-INF Matrix: GS Sample QC Type (SACode): CS Cooler ID: 1408584-02 04/16/2014 21:40 **COC Number:** Receive Date: 04/15/2014 13:00 Sullins Sampling Date: Project Number: Sampling Location: Sample Depth: **GW-INF** Lab Matrix: Water Sampling Point: GTIM Sampled By: Sample Type: Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): GW-INF Matrix: W Sample QC Type (SACode): CS

Report ID: 1000229327

Page 6 of 14

Reported:

04/21/2014 13:53

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID:	1408584-01	Client Sampl	e Name:	Sullins, S	VE-INF, 4/	15/2014 12:55:00	DPM		
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene		46000	ug/m3	2000	220	EPA-TO-15	ND	A01	1
1,1-Difluoroethane		ND	ug/m3	2500	1000	EPA-TO-15	ND	A01	2
Ethylbenzene		17000	ug/m3	2500	120	EPA-TO-15	ND	A01	2
Toluene		11000	ug/m3	1000	100	EPA-TO-15	ND	A01	2
Total Xylenes		49000	ug/m3	5000	400	EPA-TO-15	ND	A01	2
Total Petroleum Hydroca	bons	1100000	ug/m3	100000	20000	EPA-TO-15	ND	A01	2
4-Bromofluorobenzene (Su	irrogate)	156	%	70 - 130 (LC	L - UCL)	EPA-TO-15			1
4-Bromofluorobenzene (Su	rrogate)	123	%	70 - 130 (LC	L - UCL)	EPA-TO-15			2

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-TO-15	04/18/14	04/19/14 18:24	MJB	MS-A1	1000	BXD1549	
2	EPA-TO-15	04/18/14	04/18/14 15:07	MJB	MS-A1	500	BXD1549	

Report ID: 1000229327 Page 7 of 14

Reported:

04/21/2014 13:53

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID:	1408584-02	Client Sampl	e Name:	Sullins, 0	GW-INF, 4/1	5/2014 1:00:00	PM		
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene		52	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene		14	ug/L	0.50	0.098	EPA-8260B	ND		1
Toluene		10	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes		53	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes		38	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene		15	ug/L	0.50	0.082	EPA-8260B	ND		1
Total Purgeable Petroleu Hydrocarbons	ım	2000	ug/L	50	7.2	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (S	urrogate)	106	%	75 - 125 (Le	CL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		95.7	%	80 - 120 (LG	CL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (S	urrogate)	105	%	80 - 120 (L0	CL - UCL)	EPA-8260B			1

			Run	_		_	QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260B	04/17/14	04/18/14 11:29	JMS	MS-V10	1	BXD1536

Report ID: 1000229327

Page 8 of 14

Ground Zero Analysis, Inc. 1172 Kansas Avenue

Modesto, CA 95354

Reported: 04/21/2014 13:53

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXD1536						
Benzene	BXD1536-BLK1	ND	ug/L	0.50	0.083	
Ethylbenzene	BXD1536-BLK1	ND	ug/L	0.50	0.098	
Toluene	BXD1536-BLK1	ND	ug/L	0.50	0.093	_
Total Xylenes	BXD1536-BLK1	ND	ug/L	1.0	0.36	_
p- & m-Xylenes	BXD1536-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BXD1536-BLK1	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	BXD1536-BLK1	ND	ug/L	50	7.2	
1,2-Dichloroethane-d4 (Surrogate)	BXD1536-BLK1	102	%	75 - 12	5 (LCL - UCL)	
Toluene-d8 (Surrogate)	BXD1536-BLK1	98.6	%	80 - 12	0 (LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BXD1536-BLK1	98.0	%	80 - 12	0 (LCL - UCL)	

Report ID: 1000229327 Page 9 of 14

Reported: 04/21/2014 13:53

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Laboratory Control Sample

	<u> </u>				_			Control L	<u>imits</u>	
Constituent	QC Sample ID	Туре	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab Quals
QC Batch ID: BXD1536										
Benzene	BXD1536-BS1	LCS	30.020	25.000	ug/L	120		70 - 130		
Toluene	BXD1536-BS1	LCS	29.210	25.000	ug/L	117		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BXD1536-BS1	LCS	10.700	10.000	ug/L	107		75 - 125		
Toluene-d8 (Surrogate)	BXD1536-BS1	LCS	9.9900	10.000	ug/L	99.9		80 - 120		
4-Bromofluorobenzene (Surrogale)	BXD1536-BS1	LCS	10.460	10.000	ug/L	105		80 - 120		

Page 10 of 14 Report ID: 1000229327



Reported: 04/21/2014 13:53

Project: Sullins
Project Number: 5262

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Precision & Accuracy

								_	Conf	rol Limits	
Constituent	Туре	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: BXD1536	Use	d client samp	ole: N					_			
Benzene	MS	1407468-21	ND	30.020	25.000	ug/L		120		70 - 130	
	MSD	1407468-21	ND	27.440	25.000	ug/L	9.0	110	20	70 - 130	
Toluene	MS	1407468-21	ND	30.840	25.000	ug/L		123		70 - 130	
	MSD	1407468-21	ND	28.490	25.000	ug/L	7.9	114	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1407468-21	ND	10.410	10.000	ug/L		104		75 - 125	
	MSD	1407468-21	ND	10.020	10.000	ug/L	3.8	100		75 - 125	
Toluene-d8 (Surrogate)	MS	1407468-21	ND	10.140	10.000	ug/L		101		80 - 120	
	MSD	1407468-21	ND	10.120	10.000	ug/L	0.2	101		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1407468-21	ND	10.140	10.000	ug/L		101		80 - 120	
	MSD	1407468-21	ND	10.420	10.000	ug/L	2.7	104		80 - 120	

Report ID: 1000229327 4100 Allas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 11 of 14



Ground Zero Analysis, Inc.

1172 Kansas Avenue Modesto, CA 95354 Reported:

04/21/2014 13:53

Project: Sullins

Project Number: 5262

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Method Blank Analysis

QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
BXD1549-BLK1	ND	ug/m3	2.0	0.22	
BXD1549-BLK1	ND	ug/m3	5.0	2.0	
BXD1549-BLK1	ND	ug/m3	5.0	0.23	_
BXD1549-BLK1	ND	ug/m3	2.0	0.20	
BXD1549-BLK1	ND	ug/m3	10	0.80	
BXD1549-BLK1	ND	ug/m3	200	39	
BXD1549-BLK1	120	%	70 - 13	0 (LCL - UCL)	
	BXD1549-BLK1 BXD1549-BLK1 BXD1549-BLK1 BXD1549-BLK1 BXD1549-BLK1 BXD1549-BLK1	BXD1549-BLK1 ND BXD1549-BLK1 ND BXD1549-BLK1 ND BXD1549-BLK1 ND BXD1549-BLK1 ND BXD1549-BLK1 ND BXD1549-BLK1 ND	BXD1549-BLK1 ND ug/m3 BXD1549-BLK1 ND ug/m3 BXD1549-BLK1 ND ug/m3 BXD1549-BLK1 ND ug/m3 BXD1549-BLK1 ND ug/m3 BXD1549-BLK1 ND ug/m3 BXD1549-BLK1 ND ug/m3	BXD1549-BLK1 ND ug/m3 2.0 BXD1549-BLK1 ND ug/m3 5.0 BXD1549-BLK1 ND ug/m3 5.0 BXD1549-BLK1 ND ug/m3 2.0 BXD1549-BLK1 ND ug/m3 10 BXD1549-BLK1 ND ug/m3 200	BXD1549-BLK1 ND ug/m3 2.0 0.22 BXD1549-BLK1 ND ug/m3 5.0 2.0 BXD1549-BLK1 ND ug/m3 5.0 0.23 BXD1549-BLK1 ND ug/m3 2.0 0.20 BXD1549-BLK1 ND ug/m3 10 0.80 BXD1549-BLK1 ND ug/m3 200 39

Report ID: 1000229327

Page 12 of 14

Ground Zero Analysis, Inc.

1172 Kansas Avenue

Reported: 04/21/2014 13:53

Project: Sullins

Modesto, CA 95354 Project Number: 5262 Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Laboratory Control Sample

								Control I		
Constituent	QC Sample ID	Туре	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab Quals
QC Batch ID: BXD1549										
Benzene	BXD1549-BS1	LCS	20.657	15.974	ug/m3	129		70 - 130		
	BXD1549-BSD1	LCSD	20.162	15.974	ug/m3	126	2.4	70 - 130	30	
1,1-Difluoroethane	BXD1549-BS1	LCS	ND		ug/m3			70 - 130		
	BXD1549-BSD1	LCSD	ND		ug/m3			70 - 130	30	
Ethylbenzene	BXD1549-BS1	LCS	36.769	21.711	ug/m3	169		70 - 130		
	BXD1549-BSD1	LCSD	35.810	21.711	ug/m3	165	2.6	70 - 130	30	
Toluene	BXD1549-BS1	LCS	22.422	18.842	ug/m3	119		70 - 130		
	BXD1549-BSD1	LCSD	22.501	18.842	ug/m3	119	0.4	70 - 130	30	
Total Xylenes	BXD1549-BS1	LCS	109.89	65.132	ug/m3	169		70 - 130		
	BXD1549-BSD1	LCSD	105.96	65.132	ug/m3	163	3.6	70 - 130	30	
4-Bromofluorobenzene (Surrogate)	BXD1549-BS1	LCS	78.116	71.574	ug/m3	109		70 - 130		
	BXD1549-BSD1	LCSD	73.435	71.574	ug/m3	103	6.2	70 - 130		

4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Report ID: 1000229327 Page 13 of 14

04/21/2014 13:53 Reported:

Project: Sullins Project Number: 5262

Project Manager: Project Manager

Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354

Notes And Definitions

Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

PQL Practical Quantitation Limit RPD Relative Percent Difference

A01 PQL's and MDL's are raised due to sample dilution.

Report ID: 1000229327

Page 14 of 14



Date of Report: 05/01/2014

Project Manager

Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto. CA 95354

Client Project:

1262.2

BCL Project:

Sullins

BCL Work Order:

1409344

Invoice ID:

B172258

Enclosed are the results of analyses for samples received by the laboratory on 4/28/2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; AK UST101





Table of Contents

Sample Information	
Chain of Custody and Cooler Receipt formLaboratory / Client Sample Cross Reference	3
Laboratory / Client Sample Cross Reference	6
Sample Results	
1409344-01 - GW-INF	
Volatile Organic Analysis (EPA Method 8260B)	7
1409344-02 - SVE-INF LOWER	
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	8
Quality Control Reports	
Volatile Organic Analysis (EPA Method 8260B)	
Method Blank Analysis	9
Laboratory Control Sample	10
Precision and Accuracy	
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	
Method Blank Analysis	12
Laboratory Control Sample	13
Notes	
Notes and Definitions	14

Report ID: 1000232864

Page 2 of 14

Environmental Testing Laboratory Since 1949 Laboratories, Inc.

Chain of Custody and Cooler Receipt Form for 1409344 Page 1 of 3

GROUND ZERO

1172 Kansas Avenue Modesto, CA

Chain of Custod

		-	(209) 522-4119 Fax 522-4 E-mail: gza@groun <u>dzeroanalys</u> is.				C	Hě	41 F	10	I	, u	St	D a	У	
			Billing To: Gro	ound Zero /	Analy	vsis, I	nc.	Τ		Ana	lysis	Requ	ueste	1		Laboratory:
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Global ID No			EDF Report: 🖸 Yes 💢 No			Gas, Other)			I I				h			Turnaround Time: (S = Standard)
Pient Ground			Rpt Attn: Ground Zero Anaysis, Inc.			Gas,		K-T-PS	MTBE							1 day 2 day 3 day 5 day
nient Address: 11			Typo of Event: GWM Sys Monitoring Drilling Client Email: gza@groundzeroanalysis.c		3rs	ater,	/be	\ \x\	Brex,				1			Email Lab Report (.pdf): Yes D No
lient Phone: (20			Ctient Fax: (209) 522-4227	om	tain	×	on T	1 g	9							Email EDF Lab Report (.zip): 1 Yes 1 No
Sampling		Sampled By (initials)			S	× (So	Preservation Type	TPH-6, Brex, MIRE	TPH-6,				1			Mail Lab Report: ☐ Yes ☐ No
Date	Time	EDF Field ID	Sample I.D./Description / Loca	ation	No.	Matrix (Soll, Water, 0	Pres	۶	7							Special Instructions / Remarks
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Please return cooler / ice chest to Ground Zero Analysis, inc.

REC Say Bogan 4-28-14 1705 1262 Say Bogan 4-28-14 1830 REC BB 4-28-14 MG Rev. 32014

Page I of

Page 3 of 14





Chain of Custody and Cooler Receipt Form for 1409344 Page 3 of 3

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Report ID: 1000232864



Chain of Custody and Cooler Receipt Form for 1409344 Page 2 of 3

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Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354 Reported: 05/01/2014 15:49

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1409344-01	Client Sample	Name:	GW-INF,	4/28/2014	12:15:00PM, Clie	ent		
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Benzene	17	ug/L	0.50	0.083	EPA-8260B	ND	_	1
Ethylbenzene	7.7	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	3.0	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	22	ug/L	1.0	0.36	EPA-8260B	ND		1
t-Amyl Methyl ether	ND	ug/L	0.50	0.25	EPA-8260B	ND		1
t-Butyl alcohol	ND	ug/L	10	9.4	EPA-8260B	ND		1
Diisopropyl ether	ND	ug/L	0.50	0.23	EPA-8260B	ND		1
Ethyl t-butyl ether	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	1800	ug/L	50	7.2	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	106	%	75 - 125 (LC	L - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	99.0	%	80 - 120 (LC	L - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	98.7	%	80 - 120 (LC	L - UCL)	EPA-8260B			1

			Run				QC	_
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	_
1	EPA-8260B	04/30/14	04/30/14 20:32	JMS	MS-V10	1	BXD2134	-

Report ID: 1000232864 4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 7 of 14

1172 Kansas Avenue Modesto, CA 95354

Reported: 05/01/2014 15:49

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Informati	on		
1409344-01	COC Number:		Receive Date:	04/28/2014 21:45
	Project Number:		Sampling Date:	04/28/2014 12:15
	Sampling Location:		Sample Depth:	
	Sampling Point:	GW-INF	Lab Matrix:	Water
	Sampled By:	Client	Sample Type:	Water
			Delivery Work Ord	er:
			Global ID:	
			Location ID (FieldF	Point):
			Matrix:	
			Sample QC Type (SACode):
			Cooler ID:	
409344-02	COC Number:		Receive Date:	04/28/2014 21:45
	Project Number:		Sampling Date:	04/28/2014 12:40
	Sampling Location:	***	Sample Depth:	
	Sampling Point:	SVE-INF LOWER	Lab Matrix:	Air
	Sampled By:		Sample Type:	Vapor or Air
			Delivery Work Orde	er:
			Global ID:	
			Location ID (FieldF	oint):
			Matrix:	
			Sample QC Type (SACode):
			Cooler ID:	

Report ID: 1000232864 Page 6 of 14

Reported: 05/01/2014 15:49

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID:	1409344-02	Client Sampl	SVE-INF L	SVE-INF LOWER, 4/28/2014 12:40:00PM							
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #		
Benzene		21000	ug/m3	1000	110	EPA-TO-15	ND	A01	1		
1,1-Difluoroethane		ND	ug/m3	2500	1000	EPA-TO-15	ND	A01	1		
Ethylbenzene	_	4300	ug/m3	2500	120	EPA-TO-15	ND	A01	1		
Toluene		4500	ug/m3	1000	100	EPA-TO-15	ND	A01	1		
Total Xylenes		12000	ug/m3	5000	400	EPA-TO-15	ND	A01	1		
Total Petroleum Hydr	ocarbons	560000	ug/m3	100000	20000	EPA-TO-15	ND	A01	1		
4-Bromofluorobenzene	(Surrogate)	95.5	%	70 - 130 (LCI	L - UCL)	EPA-TO-15			1		

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-TO-15	04/30/14	04/30/14 19:15	MJB	MS-A1	500	BXD2282	

Page 8 of 14 Report ID: 1000232864

Reported: 05/01/2014 15:49

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXD2134						
Benzene	BXD2134-BLK1	NĐ	ug/L	0.50	0.083	
Ethylbenzene	BXD2134-BLK1	ND	ug/L	0.50	0.098	
Methyl t-bulyl ether	BXD2134-BLK1	ND	ug/L	0.50	0.11	
Toluene	BXD2134-BLK1	ND	ug/L	0.50	0.093	
Total Xylenes	BXD2134-BLK1	ND	ug/L	1.0	0.36	
t-Amyl Methyl ether	BXD2134-BLK1	ND	ug/L	0.50	0.25	
t-Butyl alcohol	BXD2134-BLK1	ND	ug/L	10	9.4	
Diisopropyl ether	BXD2134-BLK1	ND	ug/L	0.50	0.23	
Ethyl t-butyl ether	BXD2134-BLK1	ND	ug/L	0.50	0.18	
Total Purgeable Petroleum Hydrocarbons	BXD2134-BLK1	ND	ug/L	50	7.2	
1,2-Dichloroethane-d4 (Surrogate)	BXD2134-BLK1	101	%	75 - 12	5 (LCL - UCL)	
Toluene-d8 (Surrogate)	BXD2134-BLK1	100	%	80 - 12	0 (LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BXD2134-BLK1	97.9	%	80 - 12	0 (LCL - UCL)	

Report ID: 1000232864 4100 Allas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 9 of 14

1172 Kansas Avenue Modesto, CA 95354

Reported: 05/01/2014 15:49

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Laboratory Control Sample

						_		Control I	<u>imits</u>	
Constituent	QC Sample ID	Туре	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab Quals
QC Batch ID: BXD2134								_		
Benzene	BXD2134-BS1	LCS	28.000	25.000	ug/L	112		70 - 130		
Toluene	BXD2134-BS1	LCS	28.020	25.000	ug/L	112		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BXD2134-BS1	LCS	9.6700	10.000	ug/L	96.7	•	75 - 125		
Toluene-d8 (Surrogate)	BXD2134-BS1	LCS	10.180	10.000	ug/L	102		80 - 120		
4-Bromofluorobenzene (Surrogate)	BXD2134-BS1	LCS	9.9300	10.000	ug/L	99.3		80 - 120		

Page 10 of 14 Report ID: 1000232864



Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Precision & Accuracy

	_			•				_	Cont	rol Limits	
Constituent	Туре	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: BXD2134	Use	d client samp	ole: N								
Benzene	MS	1407468-37	ND	30.380	25.000	ug/L		122		70 - 130	
	MSD	1407468-37	ND	30.640	25.000	ug/L	0.9	123	20	70 - 130	
Toluene	MS	1407468-37	ND	29.970	25.000	ug/L		120		70 - 130	
	MSD	1407468-37	ND	31.290	25.000	ug/L	4.3	125	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1407468-37	ND	10.290	10.000	ug/L		103		75 - 125	
	MSD	1407468-37	ND	9.7800	10.000	ug/L	5.1	97.8		75 - 125	
Toluene-d8 (Surrogate)	MS	1407468-37	ND	10.090	10.000	ug/L		101		80 - 120	
	MSD	1407468-37	ND	10.310	10.000	ug/L	2.2	103		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1407468-37	ND	10.370	10.000	ug/L		104		80 - 120	
	MSD	1407468-37	ND	10.010	10.000	ug/L	3.5	100		80 - 120	

Report ID: 1000232864 Page 11 of 14

Reported: 05/01/2014 15:49

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXD2282						
Benzene	BXD2282-BLK1	ND	ug/m3	2.0	0.22	
1,1-Difluoroethane	BXD2282-BLK1	ND	ug/m3	5.0	2.0	
Ethylbenzene	BXD2282-BLK1	ND	ug/m3	5.0	0.23	
Toluene	BXD2282-BLK1	ND	ug/m3	2.0	0.20	
Total Xylenes	BXD2282-BLK1	ND	ug/m3	10	0.80	
Total Petroleum Hydrocarbons	BXD2282-BLK1	ND	ug/m3	200	39	
4-Bromofluorobenzene (Surrogate)	BXD2282-BLK1	95.3	%	70 - 13	0 (LCL - UCL)	

Report ID: 1000232864 4100 Allas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 12 of 14

Ground Zero Analysis, Inc. 1172 Kansas Avenue

Modesto, CA 95354

Reported: 05/01/2014 15:49

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Laboratory Control Sample

								Control I	<u>imits</u>	
Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab Quals
QC Batch ID: BXD2282										
Benzene	BXD2282-BS1	LCS	15.450	15.974	ug/m3	96.7		70 - 130		
	BXD2282-BSD1	LCSD	15.233	15.974	ug/m3	95.4	1.4	70 - 130	30	
1,1-Difluoroethane	BXD2282-BS1	LCS	ND		ug/m3			70 - 130		
	BXD2282-BSD1	LCSD	ND		ug/m3			70 - 130	30	
Ethylbenzene	BXD2282-BS1	LCS	22.358	21.711	ug/m3	103		70 - 130		
	BXD2282-BSD1	LCSD	22.028	21.711	ug/m3	101	1.5	70 - 130	30	
Toluene	BXD2282-BS1	LCS	19.965	18.842	ug/m3	106		70 - 130		
	BXD2282-B\$D1	LCSD	19.879	18.842	ug/m3	106	0.4	70 - 130	30	
Total Xylenes	BXD2282-BS1	LCS	70.512	65.132	ug/m3	108		70 - 130		
	BXD2282-BSD1	LCSD	70.143	65.132	ug/m3	108	0.5	70 - 130	30	
4-Bromofluorobenzene (Surrogate)	BXD2282-B\$1	LCS	70.0	71.6	ug/m3	97.8		70 - 130		
	BXD2282-BSD1	LCSD	70.9	71.6	ug/m3	99.0	1.3	70 - 130		

Report ID: 1000232864

Page 13 of 14

Ground Zero Analysis, Inc. 1172 Kansas Avenue

Project: Sullins Modesto, CA 95354 Project Number: 1262.2

Project Manager: Project Manager

Reported:

05/01/2014 15:49

Notes And Definitions

MDL Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

PQL Practical Quantitation Limit RPD Relative Percent Difference

A01 PQL's and MDL's are raised due to sample dilution.

Page 14 of 14 Report ID: 1000232864

Date of Report: 05/20/2014

Project Manager

Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354

Client Project:

1262.2

BCL Project:

Sullins

BCL Work Order:

1410487

Invoice ID:

B173600

Enclosed are the results of analyses for samples received by the laboratory on 5/9/2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; AK UST101

Report ID: 1000238023



Table of Contents

Sample Information	
Chain of Custody and Cooler Receipt form	3
Laboratory / Client Sample Cross Reference	6
Sample Results	
1410487-01 - GW-INF	
Volatile Organic Analysis (EPA Method 8260B)	7
1410487-02 - SVE-INF LOWER	
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	8
Quality Control Reports	
Volatile Organic Analysis (EPA Method 8260B)	
Method Blank Analysis	
Laboratory Control Sample	10
Precision and Accuracy	11
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	
Method Blank Analysis	12
Laboratory Control Sample	13
Notes	
Notes and Definitions	14

Report ID: 1000238023 Page 2 of 14



Chain of Custody and Cooler Receipt Form for 1410487 Page 1 of 3 **≥** S U ž Special Instructions / Remarks DISTRIBUTION ₫ □ Yes 202 X Yes S = Standard □ Yes SUB-OUT 1262-703276 Email EDF Lab Report (.zip): BC LABS Email Lab Report (.pdf): Date 4165 6-6-6 Turnaround Time: (Purchase Order # Mail Lab Report: aboratory: Chain of Custody Analysis Requested 85 5-9-14 19:4P (GI-QL) ISH & STEX, MIRE (0928) 381M (X318, J-H9T reservation Type 7 Billing To: Ground Zero Analysis, Inc. Matrix (Soll, Water, Gas, Other) 3 S 1 ANDREW DORN 255 D 10 to 1172 Kansas Avenue Modesto, CA (209) 522-4119 Fax 522-4227 Sample I.D/Description / Location E-mail: gza@groundzeroanalysis.com /Csso REL Cient Email: gza@groundzeroar EDF Report: Tyes 🕽 LOWER gooler / ice chest to Ground Zero Analysis, Inc. Client Fax: (209) 522-4227 Rpt Attn: Ground Zero Anaysts , GZA Type of Event GWM 6w-10F SUE-INF 8 SROUND ZERO LIVERANDER L Sampled By (initials) **EDF Field ID** 8701-h J11001000701 m Address: 1172 Kansas Avenue State, Zp: Modesto, CA 95351 nt: Ground Zero Analysis, Inc. ١ ١ 29467 Phono: (209) 522-4119 Time 1030 200 Sampling Info: Blobal fD No.: 2 5-8-14 1262.2 79-19 Date

Report ID: 1000238023



Chain of Custody and Cooler Receipt Form for 1410487 Page 2 of 3

Submission #: 14-1648-	}						9		-		
SHIPPING INF Federal Expross UPS BC Lab Field Service Oth	ORMATION Hand De er □ (Specif	livery		SHIPPING CONTAINER Ice Chest None Box D Other (Specify)							
Refrigerant: Ice Blue Ic	e 🗆 No	ne 🛘	Other 🗆	Com	ments:			,			
Custody Seals ice Chest []	.Contai Intect? Ye	ners.⊡ s 🛈 No 🗇	None	Con	ments:			,			
All samples received? Yer No D	All sample	s containe	rs intact?	Yes No		Descrip	tion(s) mat	ch COC?	res Or No		
COC Received	Emissivity: (2.95	Container:	PE	Thermo		6 7	Date/Tin	105-9-14 InitBP	T940	
/					SAMPLE	NUMBERS				1	
SAMPLE CONTAINERS	1	2	3	4	5	6.4	7	8	9	10	
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PT PE UNPRESERVED						+		-	,		
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Report ID: 1000238023



Chain of Custody and Cooler Receipt Form for 1410487 Page 3 of 3

Submission #:\U-10487		NI .		1 61	JIDDING.	CONTAIN	LER.		REE LIQ	UID
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Refrigerant: Ice ☐ Blue Ice	□ No	oner E	Other 🗆	Comm	ents:				,	
Custody Seals loe Chest C	Conta	iners □ es □ No □	None	Comi	ments:					
All samples received? Yes No □	All samp	les containe	s intact? Y	oN We		Descripti	on(s) matc	h COC? Y	es No	Ω
COC Received → YES □ NO		 ure: (A)_e							65-9-14 nk <u>BP</u>	<u> </u> 1940 -
						NUMBERS				1,
SAMPLE CONTAINERS	1,1	2	3	4 "	- 6	6.4	7	. 8	9	10
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100ml EPA 547			III.SII AVIIA		- 10	AWWINDOW				
100ml EPA 531.1				/						
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OT EPA 549										
OT EPA 632										
OT EPA 8015M										
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2 OZ. JAR	-			-						
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ENCORE									27	
SMART KIT	1		- 20	12750						
Summa Canister										

Report ID: 1000238023 Page 5 of 14

1172 Kansas Avenue Modesto, CA 95354

05/20/2014 12:25 Reported:

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Client Sample Information Laboratory

1410487-01

COC Number:

Project Number:

Sampling Location:

Sampling Point:

Sulllins

GW-INF

Andrew Dorn of GTIM Sampled By:

Receive Date: Sampling Date: 05/09/2014 19:40 05/09/2014 10:30

Sample Depth:

Lab Matrix:

Water

Sample Type:

Groundwater

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): GW-INF

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1410487-02 COC Number:

Project Number: Sulllins

Sampling Location:

SVE-INF LOWER Sampling Point:

GTIM Sampled By:

Receive Date:

05/09/2014 19:40

Sampling Date:

05/09/2014 11:00

Sample Depth: Lab Matrix:

Air

Vapor or Air Sample Type:

Delivery Work Order:

Global ID: T0600100116

Location ID (FieldPoint): SVE-INF

LOWER Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

Report ID: 1000238023 Page 6 of 14

1172 Kansas Avenue Modesto, CA 95354

Reported:

05/20/2014 12:25

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 141048	7-01 Client Samp	le Name:	Sulllins, C	GW-INF, 5/	9/2014 10:30:00/	AM, Andrew D	orn	
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	98	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	33	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	3.4	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	22	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	120	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	85	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	33	ug/L	0.50	0.082	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	2300	ug/L	50	7.2	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	104	%	75 - 125 (LC	CL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	101	%	80 - 120 (LC	L - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	102	%	80 - 120 (LC	CL - UCL)	EPA-8260B			1

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260B	05/19/14	05/19/14 18:01	JMS	MS-V10	1	BXE1400

Report ID: 1000238023

Page 7 of 14



Reported: 05/20/2014 12:25

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID:	1410487-02	Client Sampl	e Name:	Sulllins, S	VE-INF LO	OWER, 5/9/2014	11:00:00AM		
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Benzene		76000	ug/m3	2000	220	EPA-TO-15	ND	A01	1
1,1-Difluoroethane		ND	ug/m3	500	200	EPA-TO-15	ND	A01	2
Ethylbenzene		13000	ug/m3	500	23	EPA-TO-15	ND	A01	2
Methyl t-butyl ether		ND	ug/m3	200	42	EPA-TO-15	ND	A01	2
Toluene		12000	ug/m3	200	20	EPA-TO-15	ND	A01	2
p- & m-Xylenes		22000	ug/m3	500	49	EPA-TO-15	ND	A01	2
o-Xylene		5700	ug/m3	500	31	EPA-TO-15	ND	A01	2
Total Xylenes		28000	ug/m3	1000	80	EPA-TO-15	ND	A01	2
Total Petroleum Hydroca	rbons	1000000	ug/m3	200000	39000	EPA-TO-15	ND	A01	1
4-Bromofluorobenzene (S	urrogate)	103	%	70 - 130 (LC	L - UCL)	EPA-TO-15			1
4-Bromofluorobenzene (S	urrogate)	95.7	%	70 - 130 (LC	L - UCL)	EPA-TO-15			2

			Run				QC
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-TO-15	05/12/14	05/13/14 16:38	МЈВ	MS-A1	1000	BXE0900
2	EPA-TO-15	05/12/14	05/12/14 16:04	МЈВ	MS-A1	100	BXE0900

Report ID: 1000238023 Page 8 of 14

Reported: 05/20/2014 12:25

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Method Blank Analysis

	•	•		-		
Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXE1400						
Benzene	BXE1400-BLK1	ND	ug/L	0.50	0.083	
Ethylbenzene	BXE1400-BLK1	ND	ug/L	0.50	0.098	
Methyl t-butyl ether	BXE1400-BLK1	ND	ug/L	0.50	0.11	
Toluene	BXE1400-BLK1	ND	ug/L	0.50	0.093	
Total Xylenes	BXE1400-BLK1	ND	ug/L	1.0	0.36	
p- & m-Xylenes	BXE1400-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BXE1400-BLK1	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	BXE1400-BLK1	ND	ug/L	50	7.2	
1,2-Dichloroethane-d4 (Surrogate)	BXE1400-BLK1	104	%	75 - 12	5 (LCL - UCL)	
Toluene-d8 (Surrogate)	BXE1400-BLK1	101	%	80 - 12	0 (LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BXE1400-BLK1	98.3	%	80 - 12	0 (LCL - UCL)	

Report ID: 1000238023 4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 9 of 14

05/20/2014 12:25 Reported:

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Laboratory Control Sample

								Control L	<u>imits</u>	
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BXE1400										
Benzene	BXE1400-BS1	LCS	23.570	25.000	ug/L	94.3		70 - 130		
Toluene	BXE1400-BS1	LCS	24.490	25.000	ug/L	98.0		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BXE1400-BS1	LCS	10.190	10.000	ug/L	102		75 - 125		
Toluene-d8 (Surrogate)	BXE1400-BS1	LCS	9.7500	10.000	ug/L	97.5		80 - 120		
4-Bromofluorobenzene (Surrogate)	BXE1400-BS1	LCS	10.780	10.000	ug/L	108		80 - 120		

Page 10 of 14 Report ID: 1000238023

Ground Zero Analysis, Inc. 1172 Kansas Avenue

Modesto, CA 95354

Reported: 05/20/2014 12:25

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Precision & Accuracy

									Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Туре	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BXE1400	Use	d client samp	ole: N								
Benzene	 MS	1407468-78	ND	25.970	25.000	ug/L		104		70 - 130	
	MSD	1407468-78	ND	26.550	25.000	ug/L	2.2	106	20	70 - 130	
Toluene	MS	1407468-78	ND	26.330	25.000	ug/L		105		70 - 130	
	MSD	1407468-78	ND	28.220	25.000	ug/L	6.9	113	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1407468-78	ND	10.080	10.000	ug/L		101		75 - 125	
	MSD	1407468-78	ND	10.150	10.000	ug/L	0.7	102		75 - 125	
Toluene-d8 (Surrogate)	MS	1407468-78	ND	9.4500	10.000	ug/L		94.5		80 - 120	
	MSD	1407468-78	ND	10.050	10.000	ug/L	6.2	100		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1407468-78	ND	10.460	10.000	ug/L		105		80 - 120	
	MSD	1407468-78	ND	10.490	10.000	ug/L	0.3	105		80 - 120	

Report ID: 1000238023 4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 11 of 14

1172 Kansas Avenue Modesto, CA 95354 Reported:

05/20/2014 12:25

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXE0900						
Benzene	BXE0900-BLK1	ND	ug/m3	2.0	0.22	
1,1-Difluoroethane	BXE0900-BLK1	ND	ug/m3	5.0	2.0	
Ethylbenzene	BXE0900-BLK1	ND	ug/m3	5.0	0.23	
Methyl t-butyl ether	BXE0900-BLK1	ND	ug/m3	2.0	0.42	
Toluene	BXE0900-BLK1	ND	ug/m3	2.0	0.20	
p- & m-Xylenes	BXE0900-BLK1	ND	ug/m3	5.0	0.49	
o-Xylene	BXE0900-BLK1	ND	ug/m3	5.0	0.31	
Total Xylenes	BXE0900-BLK1	ND	ug/m3	10	0.80	
Total Petroleum Hydrocarbons	BXE0900-BLK1	ND	ug/m3	200	39	
4-Bromofluorobenzene (Surrogate)	BXE0900-BLK1	98.7	%	70 - 13	0 (LCL - UCL)	

Report ID: 1000238023

Page 12 of 14

05/20/2014 12:25 Reported:

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Laboratory Control Sample

								Control I	<u>_imits</u>	
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Type	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BXE0900										
Benzene	BXE0900-BS1	LCS	19.546	15.974	ug/m3	122		70 - 130		
	BXE0900-BSD1	LCSD	19.248	15.974	ug/m3	120	1.5	70 - 130	30	
1,1-Diffuoroethane	BXE0900-BS1	LCS	ND		ug/m3			70 - 130		
	BXE0900-BSD1	LCSD	ND		ug/m3			70 - 130	30	
Ethylbenzene	BXE0900-BS1	LCS	24.138	21.711	ug/m3	111		70 - 130		
	BXE0900-BSD1	LCSD	23.947	21.711	ug/m3	110	0.8	70 - 130	30	
Methyl t-butyl ether	BXE0900-BS1	LCS	22.446	18.026	ug/m3	125		70 - 130		
	BXE0900-BSD1	LCSD	22.659	18.026	ug/m3	126	0.9	70 - 130	30	
Toluene	BXE0900-BS1	LCS	21.721	18.842	ug/m3	115		70 - 130		
	BXE0900-BSD1	LCSD	21.710	18.842	ug/m3	115	0.1	70 - 130	30	
p- & m-Xylenes	BXE0900-BS1	LCS	47.047	43.421	ug/m3	108		70 - 130		
	BXE0900-BSD1	LCSD	46.865	43.421	ug/m3	108	0.4	70 - 130	30	
o-Xylene	BXE0900-BS1	LCS	23.261	21.711	ug/m3	107		70 - 130		
	BXE0900-BSD1	LCSD	23.621	21.711	ug/m3	109	1.5	70 - 130	30	
Total Xylenes	BXE0900-BS1	LCS	70.308	65.132	ug/m3	108		70 - 130		
	BXE0900-BSD1	LCSD	70.486	65.132	ug/m3	108	0.3	70 - 130	30	
4-Bromofluorobenzene (Surrogate)	BXE0900-BS1	LCS	73.1	71.6	ug/m3	102		70 - 130		
	BXE0900-BSD1	LCSD	73.6	71.6	ug/m3	103	0.6	70 - 130		

Report ID: 1000238023 Page 13 of 14



Date of Report: 07/02/2014

Project Manager

Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354

Client Project:

1262.2

BCL Project:

Sullins

BCL Work Order:

1413711

Invoice ID:

B177150

Enclosed are the results of analyses for samples received by the laboratory on 6/18/2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

Ground Zero Analysis, Inc. Reported: 05/20/2014 12:25

Project: Sullins 1172 Kansas Avenue Modesto, CA 95354 Project Number: 1262.2 Project Manager: Project Manager

Notes And Definitions

MDL Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

PQL Practical Quantitation Limit RPD Relative Percent Difference

A01 PQL's and MDL's are raised due to sample dilution.

Report ID: 1000238023 Page 14 of 14

1172 Kansas Avenue Modesto, CA (209) 522-4119 Fax 522-4227

Chain of Custody

Chain of Custody and Cooler Receipt Form for 1413711

Page 1 of 3

Environmental Testing Laboratory Since 1949

Laboratories, Inc.

				è	E-mail: gza@grou	ndzeroanalysis.com	_		_		_							_	_#	<i>+14-</i>	1371	t		
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Page 3 of 29





Sample	e Information		
	Chain of Custody and Cooler Rece	eipt form	. 3
	Laboratory / Client Sample Cross F	Reference	. 6
Sample	e Results		
	1413711-01 - W - BS		
	Volatile Organic Analysis	(EPA Method 8260B)	. 11
	1413711-02 - W - 1S		
	Volatile Organic Analysis	(EPA Method 8260B)	. 12
	1413711-03 - W - 1		
	Volatile Organic Analysis	(EPA Method 8260B)	13
	1413711-04 - W - A		
		(EPA Method 8260B)	. 14
	1413711-05 - MW - 404		
		(EPA Method 8260B)	. 15
	1413711-06 - MW - 104		
	,	(EPA Method 8260B)	. 16
	1413711-07 - MW - 204	(EDAM # 10000B)	4.7
		(EPA Method 8260B)	. 17
	1413711-08 - MW - 205	(EPA Method 8260B)	4.0
	1413711-09 - MW - 206	(EPA Metriod 6260B)	. 10
		(EPA Method 8260B)	10
	1413711-10 - MW - 207	(LFA Method 0200b)	. 13
		(EPA Method 8260B)	20
	1413711-11 - MW - 208	(Li / Hotilod OLOOD)	. 20
		(EPA Method 8260B)	21
	1413711-12 - MW - 304	(
	Volatile Organic Analysis	(EPA Method 8260B)	.22
	1413711-13 - MW - 305	,	
	Volatile Organic Analysis	(EPA Method 8260B)	.23
	1413711-14 - MW - 307		
		(EPA Method 8260B)	24
	1413711-15 - MW - 308		
	Volatile Organic Analysis	(EPA Method 8260B)	25
Quality	Control Reports		
	Volatile Organic Analysis (EPA N		
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		e	
	Precision and Accuracy		. 28
Notes			
	Mates and Definitions		\sim

Report ID: 1000251600 4100 Allas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 2 of 29



Chain of Custody and Cooler Receipt Form for 1413711 Page 2 of 3

BC LABORATORIES INC.		CO	OLER RE	CEIPT FO	RM	Rev. No.	17 06/0	5/14 P	age <u>I</u> (Of <u>L</u>
Submission #: 14-13711						<u></u> L		<u>'</u>		
SHIPPING INFOI Federal Express □ UPS □ BC Lab Field Service ② Other	Hand De	elivery 🗆		Ice Ch	est 🗸	CONTAI None 🗆	Box 🗆		FREE LIC	
Refrigerant: Ice & Blue Ice	□ No	ne 🗆	Other 🗆	Com	nents:					
	Conta Intact? Ye			Con	ments;					
All samples received? Yes No 🗅	All sample	es containe	rs intact?	Yes∜Z No	i a	Descrip	tion(s) mat	ch COC?	Yes 🕅 No	
COC Received	missivity:	097	Container	:VOY	_ Thermor	neter ID: 2	+07	Date/Tin	nellelu	1 2320
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Report ID: 1000251600



Chain of Custody and Cooler Receipt Form for 1413711 Page 3 of 3

BC LABORATORIES INC.		со	OLER REC	CEIPT FO	RM	Rev. No.	17 06/0	5/14 P	age <u>L</u> (of <u>2</u>
Submission #: 14-13711										-
SHIPPING INFO	RMATIO	N			HIPPING			H	FREE LIC	
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Report ID: 1000251600



1172 Kansas Avenue Modesto, CA 95354

07/02/2014 17:09

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory

Client Sample Information

1413711-04

COC Number:

Project Number:

Sullins

Sampling Location: Sampling Point:

W-A

Sampled By:

Andrew Dorn of GTIM

Receive Date:

06/18/2014 23:20

Sampling Date: Sample Depth:

06/17/2014 12:15

Lab Matrix:

Water

Sample Type:

Groundwater

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): W - A

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1413711-05

COC Number:

Project Number: Sampling Location:

Sampling Point:

MW - 404

Sampled By:

Sullins

Andrew Dorn of GTIM

Receive Date:

06/18/2014 23:20 06/17/2014 13:25

Sampling Date: Sample Depth:

Lab Matrix:

Water Groundwater

Sample Type:

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): MW - 404

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1413711-06

COC Number:

Project Number:

Sampling Location:

Sampling Point:

Sampled By:

Sullins

MW - 104 Andrew Dorn of GTIM

Receive Date:

06/18/2014 23:20

Sampling Date:

06/17/2014 13:55

Sample Depth:

Water

Lab Matrix:

Groundwater

Sample Type:

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): MW - 104

Matrix: W

Sample QC Type (SACode): CS



1172 Kansas Avenue Modesto, CA 95354

Reported:

07/02/2014 17:09

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory

Client Sample Information

1413711-01

COC Number:

Project Number:

Sullins

Sampling Location: Sampling Point:

W-BS

Sampled By:

Andrew Dorn of GTIM

Receive Date:

06/18/2014 23:20

Sampling Date:

06/17/2014 11:30

Sample Depth:

Lab Matrix: Sample Type: Water Groundwater

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): W - BS

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1413711-02

COC Number:

Project Number:

Sampling Location: Sampling Point:

W - 1S

Sampled By:

Sullins

Andrew Dorn of GTIM

Receive Date:

06/18/2014 23:20

Sampling Date:

06/17/2014 11:55

Sample Depth: Lab Matrix:

Water

Groundwater Sample Type:

Delivery Work Order:

Global ID: T0600100116 Location ID (FieldPoint): W - 1S

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1413711-03

COC Number:

Project Number: Sampling Location: Sullins

Sampling Point: Sampled By:

W - 1

Andrew Dorn of GTIM

Receive Date:

06/18/2014 23:20

Sampling Date:

06/17/2014 13:30

Sample Depth:

Lab Matrix:

Water Groundwater

Sample Type:

Delivery Work Order:

Global ID: T0600100116

Location ID (FieldPoint): W - 1

Sample QC Type (SACode): CS

1172 Kansas Avenue Modesto, CA 95354

07/02/2014 17:09 Reported:

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory

Client Sample Information

1413711-07

COC Number:

Project Number: Sampling Location:

Sullins

Sampling Point:

Sampled By:

MW - 204

Andrew Dorn of GTIM

Receive Date:

06/18/2014 23:20 06/17/2014 13:45

Sampling Date: Sample Depth:

Lab Matrix:

Water

Sample Type:

Groundwater

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): MW - 204

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1413711-08

COC Number:

Project Number:

Sampling Location: Sampling Point:

MW - 205

Sampled By:

Sullins

Andrew Dorn of GTIM

Receive Date:

06/18/2014 23:20

Sampling Date:

06/17/2014 12:50

Sample Depth: Lab Matrix:

Water

Groundwater Sample Type:

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): MW - 205

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1413711-09

COC Number:

Project Number: Sampling Location:

Sullins

Sampling Point:

Sampled By:

MW - 206

Andrew Dorn of GTIM

Receive Date:

06/18/2014 23:20

Sampling Date:

06/17/2014 10:30

Sample Depth:

Water

Lab Matrix: Sample Type:

Groundwater

Delivery Work Order:

Global ID: T0600100116

Location ID (FieldPoint): MW - 206

Matrix: W

Sample QC Type (SACode): CS



1172 Kansas Avenue Modesto, CA 95354

07/02/2014 17:09 Reported:

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory

Client Sample Information

1413711-13

COC Number:

Project Number: Sullins

Sampling Location:

Sampling Point:

Sampled By:

MW - 305

Andrew Dorn of GTIM

Receive Date:

06/18/2014 23:20

Sampling Date:

06/17/2014 12:45

Sample Depth:

Water

Lab Matrix:

Sample Type:

Groundwater

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): MW - 305

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1413711-14

COC Number:

Project Number:

Sullins

Sampling Location:

Sampling Point:

Sampled By:

MW - 307

Andrew Dorn of GTIM

Receive Date:

06/18/2014 23:20 06/17/2014 12:15

Sampling Date: Sample Depth:

Lab Matrix:

Water Sample Type: Groundwater

Delivery Work Order:

Global ID: T0600100116

Location ID (FieldPoint): MW - 307

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1413711-15

COC Number:

Project Number:

Sullins

Sampling Point:

Sampling Location:

Sampled By:

MW - 308

Andrew Dorn of GTIM

Receive Date:

06/18/2014 23:20

Sampling Date:

06/17/2014 11:00

Sample Depth:

Water

Lab Matrix:

Groundwater

Sample Type:

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): MW - 308

Matrix: W

Sample QC Type (SACode): CS



1172 Kansas Avenue Modesto, CA 95354

07/02/2014 17:09 Reported:

> Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information 1413711-10 COC Number:

Sullins

Project Number: Sampling Location:

Sampling Point: Sampled By:

MW - 207

Andrew Dorn of GTIM

Receive Date:

06/18/2014 23:20

Sampling Date: Sample Depth:

06/17/2014 12:05

Lab Matrix:

Water Groundwater

Sample Type:

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): MW - 207

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1413711-11

COC Number:

Project Number:

Sullins

Sampling Location:

Sampling Point: MW - 208

Sampled By:

Andrew Dorn of GTIM

Receive Date: Sampling Date:

06/18/2014 23:20 06/17/2014 11:10

Sample Depth:

Lab Matrix: Water Sample Type: Groundwater

Delivery Work Order:

Global ID: T0600100116 Location ID (FieldPoint): MW - 208

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1413711-12

COC Number:

Project Number: Sampling Location:

Sullins

Sampling Point:

Sampled By:

MW - 304

Andrew Dorn of GTIM

Receive Date: Sampling Date: 06/18/2014 23:20

Sample Depth:

06/17/2014 13:35

Lab Matrix: Sample Type:

Water Groundwater

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): MW - 304

Matrix: W

Sample QC Type (SACode): CS

07/02/2014 17:09 Reported:

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID:	1413711-01	Client Sampl	e Name:	Sullins, V	/ - BS, 6/17	7/2014 11:30:00 <i>A</i>	M, Andrew D	orn	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Benzene		26	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene		0.67	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-bulyl ether		ND	ug/L	0.50	0.11	EPA-82608	ND		1
Тоіиеле		1.3	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes		2.5	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes		1.2	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	_	1.3	ug/L	0.50	0.082	EPA-8260B	ND	_	1
Total Purgeable Petrol Hydrocarbons	eum	190	ug/L	50	7.2	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4	(Surrogate)	106	%	75 - 125 (LC	L - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		96.3	%	80 - 120 (LC	L - UCL)	EPA-8260B			1
4-Bromofluorobenzene	(Surrogate)	101	%	80 - 120 (LC	L - UCL)	EPA-8260B			1

	Run						QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	07/01/14	07/01/14 14:09	JMS	MS-V12	1	BXG0077	

Page 11 of 29 Report ID: 1000251600



Reported: 07/02/2014 17:09

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1413711	-02 Client Sampl	le Name:	Sullins, W	/ - 1S, 6/17	7/2014 11:55:00A	M, Andrew D	orn	
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Benzene	9.3	ug/L	1.0	0.17	EPA-8260B	ND	A01	1
Ethylbenzene	ND	ug/L	1.0	0.20	EPA-82608	ND	A01	1
Methyl t-butyl ether	ND	ug/L	1.0	0.22	EPA-8260B	ND	A01	1
Toluene	ND	ug/L	1.0	0.19	EPA-8260B	ND	A01	1
Total Xylenes	ND	ug/L	2.0	0.72	EPA-8260B	ND	A01	1
p- & m-Xylenes	ND	ug/L	1.0	0.56	EPA-8260B	ND	A01	1
o-Xylene	ND	ug/L	1.0	0.16	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons	320	ug/L	100	14	Luft-GC/MS	ND	A01	1
1,2-Dichloroethane-d4 (Surrogate)	97.9	%	75 - 125 (LC	L - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	86.7	%	80 - 120 (LC	L - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	103	%	80 - 120 (LC	L - UCL)	EPA-8260B			1

	Run						QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	07/01/14	07/01/14 14:44	JMS	MS-V12	2	BXG0077	

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Report ID: 1000251600 4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 12 of 29

Reported: 07/02/2014 17:09

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1	413711-03	Client Sampl	e Name:	Sullins, W -	1, 6/17/2	2014 1:30:00PM	, Andrew Dor	n	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene		2200	ug/L	25	4.2	EPA-8260B	ND	A01,S05	1
Ethylbenzene		1500	ug/L	25	4.9	EPA-8260B	ND	A01,S05	1
Methyl t-butyl ether		23	ug/L	0.50	0.11	EPA-8260B	ND		2
Toluene		210	ug/L	25	4.6	EPA-8260B	ND	A01,S05	1
Total Xylenes		2900	ug/L	50	18	EPA-8260B	ND	A01,S05	1
p- & m-Xylenes		2500	ug/L	25	14	EPA-8260B	ND	A01,S05	1
o-Xylene		370	ug/L	25	4.1	EPA-8260B	ND	A01,S05	1
Total Purgeable Petroleum Hydrocarbons		25000	ug/L	2500	360	Luft-GC/MS	ND	A01,S05	1
1,2-Dichloroethane-d4 (Surr	ogate)	87.0	%	75 - 125 (LCL	- UCL)	EPA-8260B		S05	1
1,2-Dichloroethane-d4 (Surr	ogate)	93.8	%	75 - 125 (LCL	- UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)		92.8	%	80 - 120 (LCL	- UCL)	EPA-8260B		S05	1
Toluene-d8 (Surrogate)		84.2	%	80 - 120 (LCL	- UCL)	EPA-8260B			2
4-Bromofluorobenzene (Sur	rogate)	105	%	80 - 120 (LCL	- UCL)	EPA-8260B		S05	1
4-Bromofluorobenzene (Sur	rogate)	83.6	%	80 - 120 (LCL	- UCL)	EPA-8260B			2

	Run						QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	07/01/14	07/02/14 12:35	JMS	MS-V12	50	BXG0077	
2	EPA-8260B	07/01/14	07/01/14 18:23	JMS	MS-V12	1	BXG0077	

Report ID: 1000251600

Page 13 of 29

Reported: 07/02/2014 17:09

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID:	1413711-04	Client Sampl	e Name:	Sullins, V	V - A, 6/17/2	2014 12:15:00PN	1, Andrew Do	rn	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene		2200	ug/L	12	2.1	EPA-8260B	ND	A01	1
Ethylbenzene		170	ug/L	12	2.4	EPA-8260B	ND	A01	1
Methyl t-butyl ether		21	ug/L	0.50	0.11	EPA-8260B	ND		2
Toluene	_	84	ug/L	0.50	0.093	EPA-8260B	ND		2
Total Xylenes	_	250	ug/L	25	9.0	EPA-8260B	ND	A01	1
p- & m-Xylenes		190	ug/L	12	7.0	EPA-8260B	ND	A01	1
o-Xylene		68	ug/L	12	2.0	EPA-8260B	ND	A01	1
Total Purgeable Petroleur Hydrocarbons	n	6100	ug/L	1200	180	Luft-GC/MS	ND	A01	1
1,2-Dichloroethane-d4 (Su	rrogate)	107	%	75 - 125 (LC	CL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Su	rrogate)	110	%	75 - 125 (LC	CL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)		90.4	%	80 - 120 (LC	CL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		93.7	%	80 - 120 (LC	CL - UCL)	EPA-8260B		-	2
4-Bromofluorobenzene (Su	ırrogate)	103	%	80 - 120 (LC	CL - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Su	irrogate)	105	%	80 - 120 (LC	CL - UCL)	EPA-8260B			2

			Run		QC				
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8260B	07/01/14	07/01/14 18:59	JMS	MS-V12	25	BXG0077		
2	EPA-8260B	07/01/14	07/01/14 15:02	JMS	MS-V12	1	BXG0077		

Report ID: 1000251600

Page 14 of 29



Reported: 07/02/2014 17:09

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1	413711-05	Client Sampl	e Name:	Sullins, M	W - 404, 6	/17/2014 1:25:0	0PM, Andrew	Dorn	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene		4500	ug/L	25	4.2	EPA-8260B	ND	A01,S05	1
Ethylbenzene		130	ug/L	12	2.4	EPA-8260B	ND	A01	2
Methyl t-butyl ether		21	ug/L	0.50	0.11	EPA-8260B	ND	_	3
Toluene	_	100	ug/L	0.50	0.093	EPA-8260B	ND		3
Total Xylenes		240	ug/L	25	9.0	EPA-8260B	ND	A01	2
p- & m-Xylenes		180	ug/L	12	7.0	EPA-8260B	ND	A01	2
o-Xylene	_	62	ug/L	12	2.0	EPA-8260B	ND	A01	2
Total Purgeable Petroleum Hydrocarbons		6500	ug/L	1200	180	Luft-GC/MS	ND	A01	2
1,2-Dichloroethane-d4 (Sur	rogate)	89.1	%	75 - 125 (LC	L - UCL)	EPA-8260B		S05	1
1,2-Dichloroethane-d4 (Sur	rogate)	100	%	75 - 125 (LC	L - UCL)	EPA-8260B			2
1,2-Dichloroethane-d4 (Sur	rogate)	111	%	75 - 125 (LC	L - UCL)	EPA-8260B			3
Toluene-d8 (Surrogate)		94.9	%	80 - 120 (LC	L - UCL)	EPA-8260B		\$05	1
Toluene-d8 (Surrogate)		94.2	%	80 - 120 (LC	L - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)		88.4	%	80 - 120 (LC	L - UCL)	EPA-8260B			3
4-Bromofluorobenzene (Sur	rogate)	103	%	80 - 120 (LC	L - UCL)	EPA-8260B		S05	1
4-Bromofluorobenzene (Sur	rogate)	99.2	%	80 - 120 (LC	L - UCL)	EPA-8260B			2
	rogale)	106	%	80 - 120 (LC	L - UCL)	EPA-8260B			3

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	07/01/14	07/02/14 12:53	JMS	MS-V12	50	BXG0077	
2	EPA-8260B	07/01/14	07/01/14 19:17	JMS	MS-V12	25	BXG0077	
3	EPA-8260B	07/01/14	07/01/14 15:38	JMS	MS-V12	1	BXG0077	

Report ID: 1000251600 4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 15 of 29

Reported: 07/02/2014 17:09

Project: Sullins

Project Number: 1262.2
Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID:	1413711-06	Client Sampl	e Name:	Sullins, M\	W - 104, 6	/17/2014 1:55:0	OPM, Andrew	Dorn	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Benzene		2400	ug/L	12	2.1	EPA-8260B	ND	A01	1
Ethylbenzene		320	ug/L	12	2.4	EPA-82608	ND	A01	1
Methyl t-butyl ether		30	ug/L	0.50	0.11	EPA-8260B	ND		2
Toluene		76	ug/L	12	2.3	EPA-8260B	ND	A01	1
Total Xylenes		510	ug/L	25	9.0	EPA-8260B	ND	A01	1
p- & m-Xylenes		410	ug/L	12	7.0	EPA-8260B	ND	A01	1
o-Xylene		99	ug/L	12	2.0	EPA-8260B	ND	A01	1
Total Purgeable Petroleum Hydrocarbons		7200	ug/L	1200	180	Luft-GC/MS	ND	A01	1
1,2-Dichloroethane-d4 (Sur	rogate)	99.0	%	75 - 125 (LCL	- UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Sur	rogate)	103	%	75 - 125 (LCL	- UCL)	EPA-8260B	_		2
Toluene-d8 (Surrogate)		93.0	%	80 - 120 (LCL	- UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)		94.4	%	80 - 120 (LCL	- UCL)	EPA-8260B			2
4-Bromofluorobenzene (Sur	rogate)	102	%	80 - 120 (LCL	- UCL)	EPA-8260B			1
4-Bromofluorobenzene (Sur	rogate)	101	%	80 - 120 (LCL	UCL)	EPA-8260B			2

			Run		QC				
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8260B	07/01/14	07/01/14 19:54	JMS	MS-V12	25	BXG0077		
2	EPA-8260B	07/01/14	07/01/14 15:56	JMS	MS-V12	1	BXG0077		

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Reported: 07/02/2014 17:09

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1413711-0	7 Client Sampl	e Name:	Sullins, M	IW - 204, 6	/17/2014 1:45:0	OPM, Andrew	Dorn	
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Benzene	790	ug/L	5.0	0.83	EPA-8260B	ND	A01,S05	1
Ethylbenzene	100	ug/L	0.50	0.098	EPA-8260B	ND		2
Methyl t-butyl ether	0.51	ug/L	0.50	0.11	EPA-8260B	ND		2
Toluene	37	ug/L	0.50	0.093	EPA-8260B	ND		2
Total Xylenes	210	ug/L	1.0	0.36	EPA-8260B	ND	_	2
p- & m-Xylenes	160	ug/L	0.50	0.28	EPA-8260B	ND		2
o-Xylene	47	ug/L	0.50	0.082	EPA-8260B	ND		2
Total Purgeable Petroleum Hydrocarbons	2300	ug/L	50	7.2	Luft-GC/MS	ND		2
1,2-Dichloroethane-d4 (Surrogate)	86.1	%	75 - 125 (LC	L - UCL)	EPA-8260B		S05	1
1,2-Dichloroethane-d4 (Surrogate)	106	%	75 - 125 (LC	L - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	92.8	%	80 - 120 (LC	L - UCL)	EPA-8260B		S05	1
Toluene-d8 (Surrogate)	92.5	%	80 - 120 (LC	L - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surrogate)	96.4	%	80 - 120 (LC	L - UCL)	EPA-8260B		S05	1
4-Bromofluorobenzene (Surrogate)	95.2	%	80 - 120 (LC	L - UCL)	EPA-82608	_		2

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	07/01/14	07/02/14 09:14	JMS	MS-V12	10	BXG0077	
2	EPA-8260B	07/01/14	07/01/14 16:14	JMS	MS-V12	1	BXG0077	

Report ID: 1000251600 4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 17 of 29



07/02/2014 17:09 Reported:

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1413711-0	O8 Client Sampl	e Name:	Sullins, M	W - 205, 6	/17/2014 12:50:0	00PM, Andrew	Dorn	
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	4300	ug/L	50	8.3	EPA-8260B	ND	A01,S05	1
Ethylbenzene	200	ug/L	25	4.9	EPA-8260B	ND	A01,S05	2
Methyl t-butyl ether	41	ug/L	0.50	0.11	EPA-8260B	ND		3
Toluene	63	ug/L	0.50	0.093	EPA-8260B	ND	_	3
Total Xylenes	120	ug/L	50	18	EPA-8260B	ND	A01,S05	2
p- & m-Xylenes	90	ug/L	25	14	EPA-8260B	ND	A01,S05	2
o-Xylene	26	ug/L	25	4.1	EPA-8260B	ND	A01,S05	2
Fotal Purgeable Petroleum	9900	ug/L	2500	360	Luft-GC/MS	ND	A01,S05	2
1,2-Dichloroethane-d4 (Surrogate)	85.7	%	75 - 125 (LC	L - UCL)	EPA-8260B		S05	1
1,2-Dichloroethane-d4 (Surrogate)	87.3	%	75 - 125 (LC	L - UCL)	EPA-8260B		S05	2
1,2-Dichloroethane-d4 (Surrogate)	102	%	75 - 125 (LC	L - UCL)	EPA-8260B			3
Toluene-d8 (Surrogate)	96.8	%	80 - 120 (LC	L - UCL)	EPA-8260B		S05	1
oluene-d8 (Surrogate)	90.4	%	80 - 120 (LC	L - UCL)	EPA-8260B		S05	2
Toluene-d8 (Surrogate)	90.2	%	80 - 120 (LC	L - UCL)	EPA-8260B			3
4-Bromofluorobenzene (Surrogate)	101	%	80 - 120 (LC	L - UCL)	EPA-8260B		S05	1
4-Bromofluorobenzene (Surrogate)	92.6	%	80 - 120 (LC	L - UCL)	EPA-8260B		S05	2
-Bromofluorobenzene (Surrogate)	112	%	80 - 120 (LC	L - UCL)	EPA-8260B			3

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	07/01/14	07/02/14 09:50	JMS	MS-V12	100	BXG0077	
2	EPA-8260B	07/01/14	07/02/14 13:11	JMS	MS-V12	50	BXG0077	_
3	EPA-8260B	07/01/14	07/01/14 18:04	JMS	MS-V12	1	BXG0077	

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Reported: 07/02/2014 17:09

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

1413711-09	Client Sampl	e Name:	Sullins	Sullins, MW - 206, 6/17/2014 10:30:00AM, Andrew Dorn							
	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #			
	0.87	ug/L	0.50	0.083	EPA-8260B	ND		1			
	ND	ug/L	0.50	0.098	EPA-8260B	ND		1			
	1.3	ug/L	0.50	0.11	EPA-8260B	ND		1			
	ND	ug/L	0.50	0.093	EPA-8260B	ND		1			
	ND	ug/L	1.0	0.36	EPA-8260B	ND		1			
	ND	ug/L	0.50	0.28	EPA-82608	ND		1			
	ND	ug/L	0.50	0.082	EPA-8260B	ND		1			
1	73	ug/L	50	7.2	Luft-GC/MS	ND		1			
rogate)	106	%	75 - 125	LCL - UCL)	EPA-8260B			111			
	92.7	%	80 - 120 (LCL - UCL)	EPA-8260B	_		1			
rrogate)	97.0	%	80 - 120 (LCL - UCL)	EPA-8260B		_	1			
	n rrogate)	Result 0.87 ND 1.3 ND ND ND ND ND ND ND N	Result Units 0.87 ug/L ND ug/L 1.3 ug/L ND ug/L ND ug/L ND ug/L ND ug/L n 73 ug/L rogale) 106 % 92.7 %	Result Units PQL 0.87 ug/L 0.50 ND ug/L 0.50 1.3 ug/L 0.50 ND ug/L 0.50 ND ug/L 1.0 ND ug/L 0.50 ND ug/L 0.50 ND ug/L 50 rogale) 106 % 75 - 125 92.7 % 80 - 120 6	Result Units PQL MDL 0.87 ug/L 0.50 0.083 ND ug/L 0.50 0.098 1.3 ug/L 0.50 0.11 ND ug/L 0.50 0.093 ND ug/L 1.0 0.36 ND ug/L 0.50 0.28 ND ug/L 0.50 0.082 n 73 ug/L 50 7.2 rogate) 106 % 75 - 125 (LCL - UCL) 92.7 % 80 - 120 (LCL - UCL)	Result Units PQL MDL Method 0.87 ug/L 0.50 0.083 EPA-8260B ND ug/L 0.50 0.098 EPA-8260B 1.3 ug/L 0.50 0.11 EPA-8260B ND ug/L 0.50 0.093 EPA-8260B ND ug/L 1.0 0.36 EPA-8260B ND ug/L 0.50 0.28 EPA-8260B ND ug/L 0.50 0.082 EPA-8260B ND ug/L 50 7.2 Luft-GC/MS rogale) 106 % 75 - 125 (LCL - UCL) EPA-8260B 92.7 % 80 - 120 (LCL - UCL) EPA-8260B	Result Units PQL MDL Method MB Bias 0.87 ug/L 0.50 0.083 EPA-8260B ND ND ug/L 0.50 0.098 EPA-8260B ND 1.3 ug/L 0.50 0.11 EPA-8260B ND ND ug/L 0.50 0.093 EPA-8260B ND ND ug/L 1.0 0.36 EPA-8260B ND ND ug/L 0.50 0.28 EPA-8260B ND ND ug/L 0.50 0.082 EPA-8260B ND ND ug/L 50 7.2 Luft-GC/MS ND rogale) 106 % 75 - 125 (LCL - UCL) EPA-8260B 92.7 % 80 - 120 (LCL - UCL) EPA-8260B	Result Units PQL MDL Method Bias Quals			

			Run		QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	07/01/14	07/01/14 14:27	JMS	MS-V12	1	BXG0077	

Reported: 07/02/2014 17:09

Project: Sullins

Project Number: 1262.2
Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID:	1413711-10	Client Sampl	e Name:	Sullins, N	Sullins, MW - 207, 6/17/2014 12:05:00PM, Andrew Dorn							
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #			
Benzene		5900	ug/L	50	8.3	EPA-8260B	ND	A01,S05	1			
Ethylbenzene		240	ug/L	2.5	0.49	EPA-8260B	ND	A01	2			
Methyl t-butyl ether	_	84	ug/L	2.5	0.55	EPA-8260B	ND	A01	2			
Toluene		53	ug/L	2.5	0.46	EPA-8260B	ND	A01	2			
Total Xylenes		110	ug/L	5.0	1.8	EPA-8260B	ND	A01	2			
p- & m-Xylenes		88	ug/L	2.5	1.4	EPA-8260B	ND	A01	2			
o-Xylene		20	ug/L	2.5	0.41	EPA-8260B	ND	A01	2			
Total Purgeable Petrol Hydrocarbons	leum	6600	ug/L	250	36	Luft-GC/MS	ND	A01	2			
1,2-Dichloroethane-d4	(Surrogate)	89.0	%	75 - 125 (L	CL - UCL)	EPA-8260B		S05	1			
1,2-Dichloroethane-d4	(Surrogate)	104	%	75 - 125 (Le	CL - UCL)	EPA-8260B			2			
Toluene-d8 (Surrogate))	96.3	%	80 - 120 (Le	CL - UCL)	EPA-8260B		S05	1			
Toluene-d8 (Surrogate))	92.5	%	80 - 120 (Le	CL - UCL)	EPA-8260B	-	_	2			
4-Bromofluorobenzene	(Surrogate)	97.6	%	80 - 120 (Le	CL - UCL)	EPA-8260B		S05	1			
4-Bromofluorobenzene	(Surrogate)	97.9	%	80 - 120 (Le	CL - UCL)	EPA-8260B	7.7		2			

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	07/01/14	07/02/14 09:32	JMS	MS-V12	100	BXG0077	
2	EPA-8260B	07/01/14	07/01/14 17:28	JMS	MS-V12	5	BXG0077	_

Report ID: 1000251600 4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 20 of 29

Reported: 07/02/2014 17:09

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 14	13711-11	Client Sampl	e Name:	Sullins, M	W - 208, 6	/17/2014 11:10:0	00AM, Andrew	/ Dorn	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene		1100	ug/L	12	2.1	EPA-8260B	ND	A01,S05	1
Ethylbenzene		77	ug/L	12	2.4	EPA-8260B	ND	A01,S05	1
Methyl t-butyl ether		31	ug/L	0.50	0.11	EPA-8260B	ND		2
Toluene		34	ug/L	0.50	0.093	EPA-8260B	ND		2
Total Xylenes		110	ug/L	1.0	0.36	EPA-8260B	ND		2
p- & m-Xylenes		90	ug/L	0.50	0.28	EPA-8260B	ND		2
o-Xylene		19	ug/L	0.50	0.082	EPA-8260B	ND		2
Total Purgeable Petroleum Hydrocarbons		3300	ug/L	1200	180	Luft-GC/MS	ND	A01,S05	1
1,2-Dichloroethane-d4 (Surro	gale)	81.5	%	75 - 125 (LC	L - UCL)	EPA-8260B		S05	1
1,2-Dichloroethane-d4 (Surro	gate)	108	%	75 - 125 (LC	L - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)		92.5	%	80 - 120 (LC	L - UCL)	EPA-8260B		S05	1
Toluene-d8 (Surrogate)		85.2	%	80 - 120 (LC	L - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surro	gate)	99.7	%	80 - 120 (LC	L - UCL)	EPA-8260B		S05	1
4-Bromofluorobenzene (Surro	gate)	111	%	80 - 120 (LC	L - UCL)	EPA-8260B			2

			Run				QC
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260B	07/01/14	07/02/14 08:23	JMS	MS-V12	25	BXG0077
2	EPA-8260B	07/01/14	07/01/14 16:34	JMS	MS-V12	1	BXG0077

Page 21 of 29 Report ID: 1000251600

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Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354 Reported: 07/02/2014 17:09

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 14	13711-12	Client Sampl	e Name:	Sullins, M	W - 304, 6	/17/2014 1:35:0	0PM, Andrew	Dorn	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene		1300	ug/L	12	2.1	EPA-8260B	ND	A01,S05	1
Ethylbenzene		62	ug/L	12	2.4	EPA-8260B	ND	A01,S05	1
Methyl t-butyl ether		9.0	ug/L	0.50	0.11	EPA-8260B	ND		2
Toluene		96	ug/L	0.50	0.093	EPA-8260B	ND	-	2
Total Xylenes		390	ug/L	1.0	0.36	EPA-8260B	ND	_	2
p- & m-Xylenes		290	ug/L	0.50	0.28	EPA-8260B	ND		2
o-Xylene		100	ug/L	0.50	0.082	EPA-8260B	ND		2
Total Purgeable Petroleum Hydrocarbons		3000	ug/L	1200	180	Luft-GC/MS	ND	A01,S05	1
1,2-Dichloroethane-d4 (Surrog	gate)	84.6	%	75 - 125 (LC	L - UCL)	EPA-8260B		S05	1
1,2-Dichloroethane-d4 (Surro	gate)	102	%	75 - 125 (LC	L - UCL)	EPA-8260B		_	2
Toluene-d8 (Surrogate)		93.2	%	80 - 120 (LC	L - UCL)	EPA-8260B		S05	1
Toluene-d8 (Surrogate)		90.7	%	80 - 120 (LC	L - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surro	gale)	98.2	%	80 - 120 (LC	L - UCL)	EPA-8260B		S05	1
4-Bromofluorobenzene (Surro	gate)	100	%	80 - 120 (LC	L - UCL)	EPA-8260B			2

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	07/01/14	07/02/14 08:40	JMS	MS-V12	25	BXG0077	
2	EPA-8260B	07/01/14	07/01/14 16:52	JMS	MS-V12	1	BXG0077	

Report ID: 1000251600 4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 22 of 29

Ground Zero Analysis, Inc. 1172 Kansas Avenue

Modesto, CA 95354

07/02/2014 17:09 Reported:

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1413711-13	Client Sample	e Name:	Sullins, M	IW - 305, 6	/17/2014 12:45:0	OPM, Andrew	Dorn	
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	940	ug/L	0.50	0.083	EPA-82608	ND	S01	1
Ethylbenzene	130	ug/L	0.50	0.098	EPA-8260B	ND	S01	1
Methyl t-butyl ether	3.8	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	36	ug/L	0.50	0.093	EPA-8260B	ND	_	1
Total Xylenes	150	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	110	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	35	ug/L	0.50	0.082	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	2300	ug/L	50	7.2	Luft-GC/MS	ND	S01	1
1,2-Dichloroethane-d4 (Surrogate)	107	%	75 - 125 (LC	CL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	94.4	%	80 - 120 (LC	L - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	98.9	%	80 - 120 (LC	L - UCL)	EPA-8260B		_	1

			Run				QC
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260B	07/01/14	07/01/14 17:46	JMS	MS-V12	1	BXG0077

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. All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report afteration, separation, detachment or third party interpretation. 4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 23 of 29

Reported: 07/02/2014 17:09

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID:	1413711-14	Client Sampl	le Name:	Sullins, M	W - 307, 6	/17/2014 12:15:0	OPM, Andrev	v Dorn	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene		520	ug/L	5.0	0.83	EPA-8260B	ND	A01,S05	1
Ethylbenzene		43	ug/L	0.50	0.098	EPA-8260B	ND		2
Methyl t-butyl ether		1.6	ug/L	0.50	0.11	EPA-8260B	ND		2
Toluene		8.3	ug/L	0.50	0.093	EPA-8260B	ND		2
Total Xylenes		28	ug/L	1.0	0.36	EPA-8260B	ND		2
p- & m-Xylenes		21	ug/L	0.50	0.28	EPA-8260B	ND		2
o-Xylene	_	6.9	ug/L	0.50	0.082	EPA-8260B	ND		2
Total Purgeable Petrol Hydrocarbons	leum	1100	ug/L	50	7.2	Luft-GC/MS	ND		2
1,2-Dichloroethane-d4	(Surrogate)	83.6	%	75 - 125 (LC	L - UCL)	EPA-82608		S05	1
1,2-Dichloroethane-d4	(Surrogate)	105	%	75 - 125 (LC	L - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate))	94.5	%	80 - 120 (LC	L - UCL)	EPA-82608		S05	1
Toluene-d8 (Surrogate))	95.8	%	80 - 120 (LC	L - UCL)	EPA-8260B			2
4-Bromofluorobenzene	(Surrogate)	96.9	%	80 - 120 (LC	L - UCL)	EPA-8260B		S05	1
4-Bromofluorobenzene	(Surrogate)	95.7	%	80 - 120 (LC	L - UCL)	EPA-8260B			2

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260B	07/01/14	07/02/14 08:05	JMS	MS-V12	10	BXG0077
2	EPA-8260B	07/01/14	07/01/14 17:10	JMS	MS-V12	1	BXG0077

Report ID: 1000251600

Page 24 of 29

Reported: 07/02/2014 17:09

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 14	13711-15	Client Sampl	e Name:	Sullins, M	W - 308, 6	/17/2014 11:00:0	00AM, Andrew	Dorn Dorn	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene		1300	ug/L	10	1.7	EPA-8260B	ND	A01	1
Ethylbenzene		110	ug/L	10	2.0	EPA-8260B	ND	A01	1,
Methyl t-butyl ether		9.1	ug/L	0.50	0.11	EPA-8260B	ND	_	2
Toluene		20	ug/L	0.50	0.093	EPA-8260B	ND		2
Total Xylenes	_	- 58	ug/L	1.0	0.36	EPA-8260B	ND		2
p- & m-Xylenes		46	ug/L	0.50	0.28	EPA-8260B	ND		2
o-Xylene		12	ug/L	0.50	0.082	EPA-8260B	ND		2
Total Purgeable Petroleum Hydrocarbons		3000	ug/L	1000	140	Luft-GC/MS	ND	A01	1
1,2-Dichloroethane-d4 (Surrog	gate)	98.9	%	75 - 125 (LC	L - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrog	gate)	110	%	75 - 125 (LC	L - UCL)	EPA-8260B		_	2
Toluene-d8 (Surrogate)		92.8	%	80 - 120 (LC	L - UCL)	EPA-8260B	_	_	1
Toluene-d8 (Surrogate)		98.0	%	80 - 120 (LC	L - UCL)	EPA-8260B		_	2
4-Bromofluorobenzene (Surro	gate)	98.1	%	80 - 120 (LC	L - UCL)	EPA-8260B			1
4-Bromofluorobenzene (Surro	gate)	99.5	%	80 - 120 (LC	L - UCL)	EPA-8260B			2

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260B	07/01/14	07/01/14 19:35	JMS	MS-V12	20	BXG0077
2	EPA-8260B	07/01/14	07/01/14 15:20	JMS	MS-V12	1	BXG0077

Report ID: 1000251600 4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 25 of 29

Reported: 07/02/2014 17:09

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL.	MDL	Lab Quals
QC Batch ID: BXG0077						
Benzene	BXG0077-BLK1	ND	ug/L	0.50	0.083	
Ethylbenzene	BXG0077-BLK1	ND	ug/L	0.50	0.098	
Methyl t-butyl ether	BXG0077-BLK1	ND	ug/L	0.50	0.11	
Toluene	BXG0077-BLK1	ND	ug/L	0.50	0.093	_
Total Xylenes	BXG0077-BLK1	ND	ug/L	1.0	0.36	
p- & m-Xylenes	BXG0077-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BXG0077-BLK1	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	BXG0077-BLK1	ND _	ug/L	50	7.2	
1,2-Dichloroethane-d4 (Surrogate)	BXG0077-BLK1	95.2	%	75 - 12	5 (LCL - UCL)	5%.
Toluene-d8 (Surrogate)	BXG0077-BLK1	94.4	%	80 - 12	0 (LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BXG0077-BLK1	99.6	%	80 - 12	0 (LCL - UCL)	

Report ID: 1000251600 4100 Allas Court Bakersfield, CA 933

Page 26 of 29

07/02/2014 17:09 Reported:

Project: Sullins

Project Number: 1262.2 Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Laboratory Control Sample

								Control I	_imits	
Constituent	QC Sample ID	Туре	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab Quals
QC Batch ID: BXG0077				_						
Benzene	BXG0077-BS1	LCS	27.730	25.000	ug/L	111		70 - 130		
Toluene	BXG0077-BS1	LCS	27.390	25.000	ug/L	110		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BXG0077-BS1	LCS	10.430	10.000	ug/L	104		75 - 125		
Toluene-d8 (Surrogate)	BXG0077-BS1	LCS	9.8600	10.000	ug/L	98.6		80 - 120		
4-Bromofluorobenzene (Surrogate)	BXG0077-BS1	LCS	10.300	10.000	ug/L	103		80 - 120		
- Distributed as a series (Series Garages)	5/(00011 501	200	70.000	10.000	ugri	100				

Report ID: 1000251600

Page 27 of 29



07/02/2014 17:09 Reported:

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Precision & Accuracy

									<u>Cont</u>	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Туре	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BXG0077	Use	d client samp	ole: N								
Benzene	 MS	1411671-51	ND	25.660	25.000	ug/L		103		70 - 130	
	MSD	1411671-51	ND	24.400	25.000	ug/L	5.0	97.6	20	70 - 130	
Toluene	MS	1411671-51	ND	24.720	25.000	ug/L		98.9		70 - 130	
	MSD	1411671-51	ND	24.340	25.000	ug/L	1.5	97.4	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1411671-51	ND	9.8700	10.000	ug/L		98.7		75 - 125	_
	MSD	1411671-51	ND	9.5600	10.000	ug/L	3.2	95.6		75 - 125	
Toluene-d8 (Surrogate)	MS	1411671-51	ND	9.6000	10.000	ug/L		96.0		80 - 120	
	MSD	1411671-51	ND	9.9200	10.000	ug/L	3.3	99.2		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1411671-51	ND	10.230	10.000	ug/L		102		80 - 120	
	MSD	1411671-51	ND	10.260	10.000	ug/L	0.3	103		80 - 120	



Ground Zero Analysis, Inc.

1172 Kansas Avenue Modesto, CA 95354 Reported: 07/02/2014 17:09

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Notes And Definitions

MDL Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

PQL Practical Quantitation Limit
RPD Relative Percent Difference

A01 PQL's and MDL's are raised due to sample dilution.

So Sample result is not within the quantitation range of the method.

S05 The sample holding time was exceeded.



Date of Report: 07/02/2014

Project Manager

Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354

Client Project:

1262.2

BCL Project:

Sullins

BCL Work Order:

1414337

Invoice ID:

B177140

Enclosed are the results of analyses for samples received by the laboratory on 6/27/2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101



Table of Contents

Sample Information	
Chain of Custody and Cooler Receipt form	3
Chain of Custody and Cooler Receipt form	6
Sample Results	
1414337-01 - GW-INF	
Volatile Organic Analysis (EPA Method 8260B)	7
1414337-02 - SVE-INF LOWER	
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	8
Quality Control Reports	
Volatile Organic Analysis (EPA Method 8260B)	
Method Blank Analysis	9
Laboratory Control Sample	10
Precision and Accuracy	11
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	
Method Blank Analysis	12
Laboratory Control Sample	13
Notes	
Notes and Definitions	14



Chain of Custody and Cooler Receipt Form for 1414337 Page 1 of 3 S N S D s O Special Instructions / Remarks 019 □ Yes □ Yes ĭ¥Yes S + Standard 1262-703276 Email EDF Lab Report (.zip): Laboratory: BC LABS 100 ST 000 6.27.19 Email Lab Report (.pdf): umaround Time: day 2 day urchase Order # fail Lab Report: 1815 REC. Below Analysis Requested 620 Chain of Custody 6-7-17 JOLW 4518 9-HUL - 09-78 JBIN 1919 9-HAL - SI-OL とき Preservation Type 支 Billing To: Ground Zero Analysis, Inc 3 Matrix (Soil, Water, Gas, Other) ৩ 10gr No. of Containers Goss Dicky groppen Sample I.D./Description / Location CHent Emeit: gza@groundzeroanalysis.com INC Modesto, CA (209) 522-4119 Fax 572-4277
E-mail: gza@groundzeroanalysis.com LOWER Cllont Fax: (209) 522-4227 er / ice chest to Ground Zero Analysis, Inc. 6-2714EDF Report:

\[\text{Tree} \] , GZA SUE-INF Type of Event GWM 12-35 F 8 七ののとことに Sile Address:
187 N. L. STREET, LIJEPMORE, Sampled By (initials) GROUND ZERO EDF Field ID Stobal ID No .: T0600100 116 ni Address: 1172 Kansas Avenue Shie, zp. Modesto, CA 95351 Ground Zero Analysis, Inc. 1 50000CS Phono: (209) 522-4119 Time 1225 1215 Sampling Info: 4-76-14 2792 1-97-9 REL. Date



Chain of Custody and Cooler Receipt Form for 1414337 Page 2 of 3

C LABORATORIES INC.		COC	DLER REC	EIPT FO	RM	Rev. No.	17 06/0	5/14 P	age 👤 C	of 🔔
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Custody Seals ice Chest 🗓		ners □ s: □ No □		KD Com	ments;		_			
lli samples received? YesOS No □	All sample	es containe	rs intact? Y	es OK No	0	Descrip	tion(s) mat	ch COC?	Yes	0
	issivity:/).97	Container:	PE	Thermon	neter ID: 8	07	Date/Tic	ne6/27/14	12140
1		•						Analyst		
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NITROGEN FORMS TOTAL SULFIDE		<u> </u>		(10)************************************						
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TOTAL ORGANIC CARBON								122		
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EPA 525										
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Chain of Custody and Cooler Receipt Form for 1414337 Page 3 of 3

Submission #: \4-14337	-							•			
SHIPPING INF Federal Express □ UPS □ BC Lab Field Service ☑ Oth	ORMATION Hand De	livery 🗀		SHIPPING CONTAINER Ice Chest None Box YES NO Other (Specify)							
Refrigerant: Ice □ Blue I	ce □ No	ne(⊠.	Other 🗆	Comn	nents:						
Custody Seals lce Chest ⊡ Joteat? Yes ⊓ 2No □	AN 18883 COPUSCOO	ners 🖸 # 🗆 No £	SJ .	Ø. Com	ments;						
All samples received? Yes No 🗆	All sample	s containe	ers intact? \	(OED / NO		Descrip	tion(s) mate	ch COC? Y	es 12 No		
COC Received	Emissivity:		Container:	Tedlor	Thermom	eter ID: _		Date/Tin	106 <u>13711</u> Init <u>18</u> P		
		Temperature: (A) 1200m °C / (C) Temp °C Analyst Init 180									
SAMPLE CONTAINERS	1	2	3	4	5	6	7	_8	9	10	
QT GENERAL MINERAL/ GENERAL											
PT PE UNPRESERVED			1		ı						
QT INORGANIC CHEMICAL METALS		ļ	-								
PT INORGANIC CHEMICAL METALS				-						L	
PT CYANIDE			1					<u> </u>			
PT NITROGEN FORMS											
PT TOTAL SULFIDE		ļ									
toz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON		ļ		<u> </u>						Comment of the	
PT TOX		ļ									
PT CHEMICAL OXYGEN DEMAND			ļ								
PA PHENOLICS	_										
iomi voa vial travel blank											
iomi VOA VIAL	()	() ()	t 3	()	()	()	()	()	(1	
QT EPA 413.1, 413.2, 418.1											
PT ODOR	_										
RADIOLOGICAL											
BACTERIOLOGICAL			ļ								
10 ml VOA VIAL- 504			ļ								
OT EPA 508/608/8080											
OT EPA 515.1/8150	_										
)T EPA 525			 								
T EPA 525 TRAVEL BLANK											
0ml EPA 547			ļ								
0ml EPA 531.1	-										
oz Amber EPA 548			 								
T EPA 549			ļ						-		
OT EPA 632											
T EPA 8015M	_		 								
T AMBER	_				+					-	
OZ. JAR									.		
2 OZ. JAR	_		ļ		+						
OIL SLEEVE	_				-						
CB VIAL		H									
LASTIC BAG Tedlar	+	¥ F	 								
ERROUS IRON					+					-	
NCORE			-								
MART KIT			-								
umma Canister											

Ground Zero Analysis, Inc.

1172 Kansas Avenue Modesto, CA 95354

Reported: 07/02/2014 16:10

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Client Sample Information Laboratory

1414337-01 **COC Number:**

Sullins

Project Number: Sampling Location:

Sampling Point: Sampled By:

GW-INF

Andrew Dorn of GTIM

Receive Date: Sampling Date:

06/27/2014 21:40 06/26/2014 12:25

Sample Depth:

Water

Lab Matrix: Sample Type:

Groundwater

Delivery Work Order: Global ID: T0600100116

Location ID (FieldPoint): GW-INF

Matrix: W

Sample QC Type (SACode): CS

Cooler ID:

1414337-02 **COC Number:**

Project Number: Sampling Location: Sullins

Sampling Point: Sampled By:

SVE-INF LOWER Andrew Dorn of GTIM Receive Date:

06/27/2014 21:40

Sampling Date:

Sample Depth:

06/26/2014 12:15

Lab Matrix:

Air

Other Sample Type: Delivery Work Order:

Global ID: T0600100116

Location ID (FieldPoint): SVE-INF

LOWER Matrix: GS

Sample QC Type (SACode): CS

Cooler ID:

Report ID: 1000251539

Page 6 of 14

Ground Zero Analysis, Inc.

1172 Kansas Avenue Modesto, CA 95354



Reported: 07/02/2014 16:10

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 141433	7-01 Client Sampl	e Name:	Sullins, G	W-INF, 6/2	26/2014 12:25:00	PM, Andrew I	Dorn	
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	17	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	2.5	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	0.87	ug/L	0.50	0.11	EPA-8260B	ND		1
Toluene	1.0	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	9.1	ug/L	1.0	0.36	EPA-8260B	ND	_	1
p- & m-Xylenes	7.0	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	2.1	ug/L	0.50	0.082	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	610	ug/L	50	7.2	Luft-GC/MS	ND		1
1,2-Dichloroethane-d4 (Surrogate)	96.9	%	75 - 125 (LC	L - UCL)	EPA-8260B			1
Foluene-d8 (Surrogate)	102	%	80 - 120 (LC	L - UCL)	EPA-8260B	_		1
1-Bromofluorobenzene (Surrogale)	104	%	80 - 120 (LC	L - UCL)	EPA-82608			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8260B	06/30/14	07/02/14 08:24	MGC	MS-V5	1	BXF2351	

Ground Zero Analysis, Inc. 1172 Kansas Avenue

Modesto, CA 95354

Reported: 07/02/2014 16:10

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID:	1414337-02	Client Sampl	e Name:	Sullins, S	VE-INF LO	WER, 6/26/2014	12:15:00PM,	Andrew Dorn	
Constituent		Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Benzene		15000	ug/m3	1000	110	EPA-TO-15	ND	A01	1
1,1-Difluoroethane		ND	ug/m3	500	200	EPA-TO-15	ND	A01	2
Ethylbenzene		1900	ug/m3	500	23	EPA-TO-15	ND	A01	2
Methyl t-butyl ether		ND	ug/m3	200	42	EPA-TO-15	ND	A01	2
Toluene		1700	ug/m3	200	20	EPA-TO-15	ND	A01	2
p- & m-Xylenes		4700	ug/m3	500	49	EPA-TO-15	ND	A01	2
o-Xylene		970	ug/m3	500	31	EPA-TO-15	ND	A01	2
Total Xylenes		5600	ug/m3	1000	80	EPA-TO-15	ND	A01	2
Total Petroleum Hydrocarh	oons	1200000	ug/m3	100000	20000	EPA-TO-15	ND	A01	1
4-Bromofluorobenzene (Su	rrogate)	105	%	70 - 130 (LC	L - UCL)	EPA-TO-15			1
4-Bromofluorobenzene (Su	rrogate)	97.9	%	70 - 130 (LC	L - UCL)	EPA-TO-15			2

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-TO-15	06/30/14	07/01/14 12:05	MJB	MS-A1	500	BXF2302	
2	EPA-TO-15	06/30/14	06/30/14 16:33	MJB	MS-A1	100	BXF2302	

Report ID: 1000251539 4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 8 of 14

Ground Zero Analysis, Inc. 1172 Kansas Avenue

Modesto, CA 95354

07/02/2014 16:10 Reported:

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXF2351						
Benzene	BXF2351-BLK1	ND	ug/L	0.50	0.083	
Ethylbenzene	BXF2351-BLK1	ND	ug/L	0.50	0.098	
Methyl t-butyl ether	BXF2351-BLK1	ND	ug/L	0.50	0.11	
Toluene	BXF2351-BLK1	ND	ug/L	0.50	0.093	_
Total Xylenes	BXF2351-BLK1	ND	ug/L	1.0	0.36	
p- & m-Xylenes	BXF2351-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BXF2351-BLK1	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	BXF2351-BLK1	ND	ug/L	50	7.2	
1,2-Dichloroethane-d4 (Surrogate)	BXF2351-BLK1	96.8	%	75 - 12	5 (LCL - UCL)	
Toluene-d8 (Surrogate)	BXF2351-BLK1	104	%	80 - 12	0 (LCL - UCL)	
4-Bromofluorobenzene (Surrogate)	BXF2351-BLK1	94.1	%	80 - 12	0 (LCL - UCL)	

Report ID: 1000251539 Page 9 of 14 Ground Zero Analysis, Inc.

1172 Kansas Avenue Modesto, CA 95354 Reported:

07/02/2014 16:10

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Laboratory Control Sample

	-		•		_		•				
								Control I	imits	<u>ts</u>	
				Spike		Percent		Percent		Lab	
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals	
QC Batch ID: BXF2351						_					
Benzene	BXF2351-BS1	LCS	23.220	25.000	ug/L	92.9		70 - 130			
Toluene	BXF2351-BS1	LCS	23.640	25.000	ug/L	94.6		70 - 130			
1,2-Dichloroethane-d4 (Surrogate)	BXF2351-BS1	LCS	9.6400	10.000	ug/L	96.4		75 - 125			
Toluene-d8 (Surrogate)	BXF2351-BS1	LCS	10.120	10.000	ug/L	101		80 - 120			
4-Bromofluorobenzene (Surrogate)	BXF2351-BS1	LCS	10.090	10.000	ug/L	101		80 - 120			
								_			

Report ID: 1000251539

Page 10 of 14



Ground Zero Analysis, Inc.

1172 Kansas Avenue Modesto, CA 95354 Reported: 07/02/2014 16:10

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Precision & Accuracy

									<u>Cont</u>	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Туре	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BXF2351	Use	d client samp	ole: N								
Benzene	MS	1414265-02	ND	23.590	25.000	ug/L		94.4		70 - 130	
	MSD	1414265-02	ND	24.270	25.000	ug/L	2.8	97.1	20	70 - 130	
Toluene	MS	1414265-02	ND	24.290	25.000	ug/L		97.2		70 - 130	
	MSD	1414265-02	ND	24.670	25.000	ug/L	1.6	98.7	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1414265-02	ND	9.2700	10.000	ug/L		92.7		75 - 125	
	MSD	1414265-02	ND	9.4800	10.000	ug/L	2.2	94.8		75 - 125	
Toluene-d8 (Surrogate)	MS	1414265-02	ND	10.190	10.000	ug/L		102		80 - 120	
	MSD	1414265-02	ND	10.090	10.000	ug/L	1.0	101		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1414265-02	ND	10.010	10.000	ug/L		100		80 - 120	
	MSD	1414265-02	ND	10.230	10.000	ug/L	2.2	102		80 - 120	

Ground Zero Analysis, Inc. 1172 Kansas Avenue

Modesto, CA 95354

Reported: 07/02/2014 16:10

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXF2302				-		
Benzene	BXF2302-BLK1	ND	ug/m3	2.0	0.22	
1,1-Difluoroethane	BXF2302-BLK1	ND	ug/m3	5.0	2.0	_
Ethylbenzene	BXF2302-BLK1	ND	ug/m3	5.0	0.23	
Methyl t-butyl ether	BXF2302-BLK1	ND	ug/m3	2.0	0.42	
Toluene	BXF2302-BLK1	ND	ug/m3	2.0	0.20	
p- & m-Xylenes	BXF2302-BLK1	ND	ug/m3	5.0	0.49	
o-Xylene	BXF2302-BLK1	ND	ug/m3	5.0	0.31	
Total Xylenes	BXF2302-BLK1	ND	ug/m3	10	0.80	
Total Petroleum Hydrocarbons	BXF2302-BLK1	ND	ug/m3	200	39	
4-Bromofluorobenzene (Surrogate)	BXF2302-BLK1	63.8	%	70 - 13	0 (LCL - UCL)	

Report ID: 1000251539

Page 12 of 14

07/02/2014 16:10 Reported:

Project: Sullins

Project Number: 1262.2 Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Laboratory Control Sample

								Control L	<u>imits</u>	
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: BXF2302										
Benzene	BXF2302-BS1	LCS	13.958	15.974	ug/m3	87.4		70 - 130		
	BXF2302-BSD1	LCSD	14.121	15.974	ug/m3	88.4	1.2	70 - 130	30	
1,1-Difluoroethane	BXF2302-BS1	LCS	ND		ug/m3			70 - 130		
	BXF2302-BSD1	LCSD	ND		ug/m3			70 - 130	30	
Ethylbenzene	BXF2302-BS1	LCS	18.728	21.711	ug/m3	86.3		70 - 130		
	BXF2302-BSD1	LCSD	18.484	21.711	ug/m3	85.1	1.3	70 - 130	30	
Methyl t-butyl ether	BXF2302-BS1	LCS	16.948	18.026	ug/m3	94.0		70 - 130		
	BXF2302-BSD1	LCSD	17.132	18.026	ug/m3	95.0	1.1	70 - 130	30	
Toluene	BXF2302-BS1	LCS	20.108	18.842	ug/m3	107		70 - 130		_
	BXF2302-BSD1	LCSD	20.188	18.842	ug/m3	107	0.4	70 - 130	30	
p- & m-Xylenes	BXF2302-BS1	LCS	39.413	43.421	ug/m3	90.8		70 - 130		
	BXF2302-BSD1	LCSD	39.188	43.421	ug/m3	90.2	0.6	70 - 130	30	
o-Xylene	BXF2302-BS1	LCS	18.806	21.711	ug/m3	86.6		70 - 130		
	BXF2302-BSD1	LCSD	18.832	21.711	ug/m3	86.7	0.1	70 - 130	30	
Total Xylenes	BXF2302-BS1	LCS	58.219	65.132	ug/m3	89.4		70 - 130		
	BXF2302-BSD1	LCSD	58.019	65.132	ug/m3	89.1	0.3	70 - 130	30	
4-Bromofluorobenzene (Surrogale)	BXF2302-BS1	LCS	80.0	71.6	ug/m3	112		70 - 130		_
	BXF2302-BSD1	LCSD	79.2	71.6	ug/m3	111	1.0	70 - 130		

Report ID: 1000251539 Page 13 of 14

07/02/2014 16:10 Reported:

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Notes And Definitions

Ground Zero Analysis, Inc.

1172 Kansas Avenue Modesto, CA 95354

Method Detection Limit

ND Analyte Not Detected at or above the reporting limit

PQL Practical Quantitation Limit RPD Relative Percent Difference

A01 PQL's and MDL's are raised due to sample dilution.

Report ID: 1000251539 Page 14 of 14



Date of Report: 07/17/2014

Project Manager

Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354

Client Project:

1262.2

BCL Project:

Sullins

BCL Work Order:

1415634

Invoice ID:

B178451

Enclosed are the results of analyses for samples received by the laboratory on 7/11/2014. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Christina Herndon

Client Service Rep

Authorized Signature

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101



Table of Contents

Sample Information	
Chain of Custody and Cooler Receipt formLaboratory / Client Sample Cross Reference	3
Laboratory / Client Sample Cross Reference	6
Sample Results	
1415634-01 - GW-INF	
Volatile Organic Analysis (EPA Method 8260B)	7
1415634-02 - SVE-INF Lower	
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	8
Quality Control Reports	
Volatile Organic Analysis (EPA Method 8260B)	
Method Blank Analysis	9
Laboratory Control Sample	10
Precision and Accuracy	
Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)	
Method Blank Analysis	12
Laboratory Control Sample	13
Notes	
Notes and Definitions	14

Page 2 of 14 Report ID: 1000256377

GROUND ZERO

Environ Laboratories, Inc.

Page 1 of 3

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dy and Cooler Receipt Form for 14156	mental Testing Laboratory Since 1949
ipt E	Since
rm fo	1949
vr 1415	
J 7	

1172 Kansas Avenue Modesto, CA (209) 522-4119 Fax 522-4227

Chain of Custody

E-n	iail: gza@groundzeroanalysis.com)	4-15634	
	Billing To: Groun	d Zero Analysis, Inc.	Analy		aboratory:	
Project #: Project Name: 1262-2 SULLINS Site Address: 187 North L STREET, LI	VERMORE, CA		BTEX, MTBE	P	BC LABS Purchase Order#	
Global ID No.:	EDF Report: ☐ Yes X No	9 2 2 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	8 KX		umaround Time: S = Sta	
Client: Ground Zero Analysis, Inc.	Rpt Altn: Ground Zero Anaysis, Inc.	las'	0 0		day 2 day 3 day	5 day
Client Address: 1172 Kansas Avenue	Type of Event: GWM Sys Monitoring Drilling	Olbox Ö	FH-6, 8,		Email Lab Report (.pdf):	ÒXÝes □ No
City, State, Zip: Modesto, CA 95351	Chont Emell: gza@groundzeroanalysis.com	Yate Yate	7FH-6 TPH-1		mail EDF Lab Report (.zip):	
Client Phone: (209) 522-4119	Client Fax: (209) 522-4227	ion is vi	1 1 1 1		Mail Lab Report:	☐ Yes ☐ No
Sampling Info: Sampled By (initi		S S E	0 2		TON ECO PROPORT	
Date Time EDF Field II	· · · / · · · · · · · · · · · · · · · ·	No. of Containers Matrix (Soil, Water Preservation Type	8260-		Special Instruct	tions / Remarks
7-10-14 1420 -1	6W-1NF	4 W HCL	. 7			
7-10-14 1430 -2	SVE-INF LOWER	16				
				 		
			111			
					CHK BY DIST	RIBUTION
					Thur The last	
						UB OUT
Signature		Print Name		Company	Date:	Time:
Received Relaquistid by.	AMDREW D			GZA	7.11.14	0950
Received Relinquished by:				BCLAB	711.14	0950
Received / Relinquished by.)	Lon Proc T	Sickey		BRIDE	211.14	100

Please return cooler / ice chest to Ground Zero Analysis, Inc. REC- 2-11-14 15:00

Page of



Chain of Custody and Cooler Receipt Form for 1415634 Page 2 of 3

Submission #: 14-156 SHIPPING INF Federal Express UPS UPS D BC Lab Field Service	ORMATIO Hand D	elivery [Ice Che	HIPPING	None 🗆	Box □		FREE LIC	
							=====			
Refrigerant: Ice Blue I		one 🗆 _	Other 🗆	Comn	ents:					
Custody Seals Ice Chest Control of the Chest Contro	intacies	alners.⊡ 'es ¤≥No ©		Com						
All samples received? Yes No □	All samp	les containe	rs intact?	Yes No	0	Descrip	tion(s) mat	ch COC?	Yes No	
COC Received	Emissivity:	0,93	Container	Voa	Thermon	neter ID: 🔏	207	Date/Tin	ne Hill	14 1500
ØYES □ NO	T		59	°C /	101 (0.2	°C	Analyst	Init W	1800
2 120	1 emperar	ure: (A)		<u> </u>	7					
SAMPLE CONTAINERS					SAMPLE	NUMBERS	1		·	1
	1	2	3	4	5	6	7	8	9	10
OT GENERAL MINERAL/ GENERAL		+-	+	 		<u> </u>			 	1,
PT PE UNPRESERVED			-	+	i .				١.	<u> </u>
OT INORGANIC CHEMICAL METALS		-	-					-		<u> </u>
PT INORGANIC CHEMICAL METALS		+						<u> </u>		
PT CYANIDE			-	-						
PT NITROGEN FORMS			-							
PT TOTAL SULFIDE										
20z. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										-
PT TOX							:			
PT CHEMICAL OXYGEN DEMAND		or REAL TONIC	1							
PIA PHENOLICS SOMI VOA VIAL TRAVEL BLANK										
HOME VOA VIAL	A ,4	f ,	1 E) ()	()	1)	() t	1	()
OT EPA 413.1, 413.2, 418.1										\perp
PT ODOR							1,000			
RADIOLOGICAL										ļ
BACTERIOLOGICAL								ļ		\vdash
10 ml VOA VIAL- 504								-		
OT EPA 508/608/8080						:			ļ	
QT EPA 515.1/8150									-	-
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OT EPA 525 TRAVEL BLANK								 	-	\vdash
10ml EPA 547			,					 -	-	
10ml EPA 531.1		_ 	ļ					 	-	
Boz Amber EPA 548				-						
OT EPA 549								-		1
QT EPA 632		+	 					 -	 	
QT EPA 8015M	_		-					 	 	*
QT AMBER		-	-							
3 OZ. JAR		-		 		 	-	 		
32 OZ. JAR		+	 	 				 		
SOIL SLEEVE		-	+	 		 		†		
PCB VIAL			-	1				 		
PLASTIC BAG		+		 				†		
FERROUS IRON		+	+		_					
ENCORE				+						
SMART KIT				ļ						

Page 4 of 14 Report ID: 1000256377



Chain of Custody and Cooler Receipt Form for 1415634 Page 3 of 3

BC LABORATORIES INC.	16		LER REC	EIFT FO	TIVI	Rev. No. 1	7 06/05	714	ige <u>Z</u> 0	'
Submission #: 14-1563								<u></u>		
SHIPPING INF Federal Express □ UPS □ BC Lab Field Service ☑ Oth		elivery 🗆		ice Ch		CONTAIL None		,	FREE LIC	
Refrigerant: Ice □ Blue I	ce 🗆 N	one 🗶	Other 🗆	Com	ments:					
Custody Seals Ice Officet 🗓	\$250000 ACC	ainers □ 'es □ No □	None	Con	ments;		_			
All samples received? Yes No □	All samp	les containe	rs intact? Y	es No		Descript	ion(s) mate	ch COC? Y	es No	
COC Received	Emissivity:		Container:	Tedla	C Thermo	meter ID:		Date/Tim	10 7/11/	14 18ac
,⊠≪Yes □ no	Temperat	ture: (A)	200m-	esc?	(C)		°C	Analyst	nit MV	1800
			No. of Particular			AUMADEDE				
SAMPLE CONTAINERS	1	2	3	4	5 AMPLE	NUMBERS 8	7	8	9	10
OT GENERAL MINERAL/ GENERAL										
PT PE UNPRESERVED					,				<u> </u>	ļ
QT INORGANIC CHEMICAL METALS						l l				
PT INORGANIC CHEMICAL METALS										ļ
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
20z. NITRATE / NITRITE								,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
PT TOTAL ORGANIC CARBON						1		San San		
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40mi VOA VIAL	t) (r 1		1 (3 ()	()	()	(()
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8086										
QT EPA 515.1/8150										
OT EPA 525										
100 m and 2	_									
QT EPA 525 TRAVEL BLANK		+								
40ml EPA 547		 								
FOUR EFA 331.1		_				 				
Soz Amber EPA 548	+									
OT EPA 549		+								
OT EPA 632	-	-								
OT EPA 8015M										
OT AMBER						\vdash	.,			·····
BOZ. JAR						\vdash				
2 OZ. JAR	+									\vdash
SOIL SLEEVE		-								
PCB VIAL		- 				 				<u> </u>
PLASTIC BAG Tedlar Bay		_A_				-				
TERROUS IRON 0										
ENCORE										
SMART KIT										
Summa Canister										

Reported: 07/17/2014 17:52

Sample QC Type (SACode): CS

Cooler ID:

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Laboratory / Client Sample Cross Reference

Laboratory Client Sample Information 1415634-01 07/11/2014 18:00 **COC Number:** Receive Date: 07/10/2014 14:20 Project Number: Sullins Sampling Date: Sampling Location: Sample Depth: **GW-INF** Water Sampling Point: Lab Matrix: Andrew Dorn of GTIM Groundwater Sampled By: Sample Type: Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): GW-INF Matrix: W Sample QC Type (SACode): CS Cooler ID: 1415634-02 COC Number: Receive Date: 07/11/2014 18:00 07/10/2014 14:30 Sullins Project Number: Sampling Date: Sampling Location: Sample Depth: Sampling Point: SVE-INF Lower Lab Matrix: Andrew Dorn of GTIM Vapor or Air Sampled By: Sample Type: Delivery Work Order: Global ID: T0600100116 Location ID (FieldPoint): SVE-INF Lower Matrix: GS

07/17/2014 17:52 Reported:

Project: Sullins Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1415	634-01 Client S	ample Name:	Sullins, C	SW-INF, 7/1	0/2014 2:20:00	PM, Andrew D	orn	
Constituent	Resu	lt Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Benzene	96	ug/L	0.50	0.083	EPA-8260B	ND		1
Ethylbenzene	34	ug/L	0.50	0.098	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND	_	1
Toluene	17	ug/L	0.50	0.093	EPA-8260B	ND		1
Total Xylenes	170	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	130	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	40	ug/L	0.50	0.082	EPA-8260B	ND		1
Total Purgeable Petroleum Hydrocarbons	2000	ug/L	100	14	Luft-GC/MS	ND	A01	2
1,2-Dichloroethane-d4 (Surrogat	e) 111	%	75 - 125 (LC	CL - UCL)	EPA-8260B			1
1,2-Dichloroethane-d4 (Surrogat	e) 109	%	75 - 125 (LC	CL - UCL)	EPA-8260B			2
Toluene-d8 (Surrogate)	107	%	80 - 120 (L0	CL - UCL)	EPA-8260B			1
Toluene-d8 (Surrogate)	103	%	80 - 120 (LC	CL - UCL)	EPA-8260B			2
4-Bromofluorobenzene (Surroga	te) 104	%	80 - 120 (LC	CL - UCL)	EPA-8260B			1
1-Bromofluorobenzene (Surroga	te) 98.9	%	80 - 120 (LC	CL - UCL)	EPA-8260B			2

		_	Run		-		QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8260B	07/14/14	07/14/14 18:20	JCC	MS-V14	1	BXG1162
2	EPA-8260B	07/14/14	07/15/14 14:35	JCC	MS-V14	2	BXG1162

Report ID: 1000256377 Page 7 of 14 Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354 Reported: 07/17/2014 17:52

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

BCL Sample ID:	1415634-02	Client Sampl	Sullins, SV	VE-INF Lo	wer, 7/10/2014	2:30:00PM, Ar	ndrew Dorn			
Constituent		Result	Result Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #	
Benzene		75000	ug/m3	2000	220	EPA-TO-15	ND	A01	1	
1,1-Difluoroethane		ND	ug/m3	500	200	EPA-TO-15	ND	A01	2	
Ethylbenzene		11000	ug/m3	500	23	EPA-TO-15	ND	A01	2	
Methyl t-butyl ether		ND	ug/m3	200	42	EPA-TO-15	ND	A01	2	
Toluene	_	8500	ug/m3	2000	200	EPA-TO-15	ND	A01	1	
p- & m-Xylenes		25000	ug/m3	500	49	EPA-TO-15	ND	A01	2	
o-Xylene		6100	ug/m3	500	31	EPA-TO-15	ND	A01	2	
Total Xylenes	_	31000	ug/m3	1000	80	EPA-TO-15	ND	A01	2	
Total Petroleum Hydrod	carbons	170000	ug/m3	20000	3900	EPA-TO-15	ND	A01	2	
4-Bromofluorobenzene ((Surrogate)	101	%	70 - 130 (LC	L - UCL)	EPA-TO-15			1	
4-Bromofluorobenzene ((Surrogate)	126	%	70 - 130 (LC	L - UCL)	EPA-TO-15			2	

			Run			QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-TO-15	07/14/14	07/14/14 18:29	MJB	MS-A1	1000	BXG1068
2	EPA-TO-15	07/14/14	07/14/14 12:58	MJB	MS-A1	100	BXG1068

Report ID: 1000256377 4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 8 of 14

Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354

Reported: 07/17/2014 17:52

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXG1162	_					
Benzene	BXG1162-BLK1	ND	ug/L	0.50	0.083	
Ethylbenzene	BXG1162-BLK1	ND	ug/L	0.50	0.098	
Methyl t-butyl ether	BXG1162-BLK1	ND	ug/L	0.50	0.11	
Toluene	BXG1162-BLK1	ND	ug/L	0.50	0.093	
Total Xylenes	BXG1162-BLK1	ND	ug/L	1.0	0.36	
p- & m-Xylenes	BXG1162-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BXG1162-BLK1	ND	ug/L	0.50	0.082	
Total Purgeable Petroleum Hydrocarbons	BXG1162-BLK1	ND	ug/L	50	7.2	
1,2-Dichloroethane-d4 (Surrogate)	BXG1162-BLK1	111	%	75 - 12	5 (LCL - UCL)	
Toluene-d8 (Surrogate)	BXG1162-BLK1	101	%	80 - 120 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BXG1162-BLK1	91.4	%	80 - 12	0 (LCL - UCL)	

Report ID: 1000256377 4100 Allas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com Page 9 of 14

1172 Kansas Avenue Modesto, CA 95354



07/17/2014 17:52 Reported:

Project: Sullins

Project Number: 1262.2 Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Laboratory Control Sample

							Control Limits		<u> </u>	
QC Sample ID	Туре	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Lab Quals	
BXG1162-BS1	LCS	24.727	25.000	ug/L	98.9		70 - 130			
BXG1162-BS1	LCS	23.096	25.000	ug/L	92.4		70 - 130			
BXG1162-BS1	LCS	10.250	10.000	ug/L	102		75 - 125			
BXG1162-BS1	LCS	10.100	10.000	ug/L	101		80 - 120			
BXG1162-BS1	LÇS	9.8900	10.000	ug/L	98.9		80 - 120			
	BXG1162-BS1 BXG1162-BS1 BXG1162-BS1	BXG1162-BS1 LCS BXG1162-BS1 LCS BXG1162-BS1 LCS BXG1162-BS1 LCS	BXG1162-BS1 LCS 24.727 BXG1162-BS1 LCS 23.096 BXG1162-BS1 LCS 10.250 BXG1162-BS1 LCS 10.100	BXG1162-BS1 LCS 24.727 25.000 BXG1162-BS1 LCS 23.096 25.000 BXG1162-BS1 LCS 10.250 10.000 BXG1162-BS1 LCS 10.100 10.000	BXG1162-BS1 LCS 24.727 25.000 ug/L BXG1162-BS1 LCS 23.096 25.000 ug/L BXG1162-BS1 LCS 10.250 10.000 ug/L BXG1162-BS1 LCS 10.100 10.000 ug/L	BXG1162-BS1 LCS 24.727 25.000 ug/L 98.9 BXG1162-BS1 LCS 23.096 25.000 ug/L 92.4 BXG1162-BS1 LCS 10.250 10.000 ug/L 102 BXG1162-BS1 LCS 10.100 10.000 ug/L 101	BXG1162-BS1 LCS 24.727 25.000 ug/L 98.9 BXG1162-BS1 LCS 23.096 25.000 ug/L 92.4 BXG1162-BS1 LCS 10.250 10.000 ug/L 102 BXG1162-BS1 LCS 10.100 10.000 ug/L 101	BXG1162-BS1 LCS 24.727 25.000 ug/L 98.9 70 - 130 BXG1162-BS1 LCS 23.096 25.000 ug/L 92.4 70 - 130 BXG1162-BS1 LCS 10.250 10.000 ug/L 102 75 - 125 BXG1162-BS1 LCS 10.100 10.000 ug/L 101 80 - 120	BXG1162-BS1 LCS 24.727 25.000 ug/L 98.9 70 - 130 BXG1162-BS1 LCS 23.096 25.000 ug/L 92.4 70 - 130 BXG1162-BS1 LCS 10.250 10.000 ug/L 102 75 - 125 BXG1162-BS1 LCS 10.100 10.000 ug/L 101 80 - 120	

Report ID: 1000256377 Page 10 of 14



Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354

Reported: 07/17/

07/17/2014 17:52

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Analysis (EPA Method 8260B)

Quality Control Report - Precision & Accuracy

				_					Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BXG1162	Use	d client samp	ole: Y - Des	cription: GV	V-INF, 07/10	/2014 14::	20				
Benzene	MS MS	1415634-01	96.220	101.71	25.000	ug/L		22.0		70 - 130	Q03
	MSD	1415634-01	96.220	111.89	25.000	ug/L	9.5	62.7	20	70 - 130	Q03
Toluene	MS	1415634-01	16.935	36.098	25.000	ug/L		76.7		70 - 130	
	MSD	1415634-01	16.935	37.934	25.000	ug/L	5.0	84.0	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1415634-01	ND	10.930	10.000	ug/L		109		75 - 125	
	MSD	1415634-01	ND	10.580	10.000	ug/L	3.3	106		75 - 125	
Toluene-d8 (Surrogate)	MS	1415634-01	ND	10.630	10.000	ug/L		106		80 - 120	_
	MSD	1415634-01	ND	10.580	10.000	ug/L	0.5	106		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	1415634-01	ND	10.340	10.000	ug/L		103		80 - 120	
	MSD	1415634-01	ND	10.390	10.000	ug/L	0.5	104		80 - 120	

Report ID: 1000256377

Page 11 of 14

Reported:

07/17/2014 17:52

Project: Sullins
Project Number: 1262.2

Project Manager: Project Manager

Ground Zero Analysis, Inc. 1172 Kansas Avenue Modesto, CA 95354

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BXG1068						
Benzene	BXG1068-BLK1	ND	ug/m3	2.0	0.22	
1,1-Difluoroethane	BXG1068-BLK1	ND	ug/m3	5.0	2.0	
Ethylbenzene	BXG1068-BLK1	ND	ug/m3	5.0	0.23	
Methyl t-butyl ether	BXG1068-BLK1	ND	ug/m3	2.0	0.42	
Toluene	BXG1068-BLK1	ND	ug/m3	2.0	0.20	
p- & m-Xylenes	BXG1068-BLK1	ND	ug/m3	5.0	0.49	
o-Xylene	BXG1068-BLK1	ND	ug/m3	5.0	0.31	
Total Xylenes	BXG1068-BLK1	ND	ug/m3	10	0.80	_
Total Petroleum Hydrocarbons	BXG1068-BLK1	ND	ug/m3	200	39	
4-Bromofluorobenzene (Surrogate)	BXG1068-BLK1	104	%	70 - 130 (LCL - UCL)		

Report ID: 1000256377

Page 12 of 14

1172 Kansas Avenue Modesto, CA 95354



Reported:

07/17/2014 17:52

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Volatile Organic Compounds by GC/MS (EPA Method TO-15 at STP)

Quality Control Report - Laboratory Control Sample

								Control L	<u>imits</u>		
				Spike		Percent		Percent		Lab	
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals	
QC Batch ID: BXG1068											
Benzene	BXG1068-BS1	LCS	12.744	15.974	ug/m3	79.8		70 - 130			
	BXG1068-BSD1	LCSD	12.910	15.974	ug/m3	80.8	1.3	70 - 130	30		
1,1-Difluoroethane	BXG1068-BS1	LCS	ND		ug/m3			70 - 130			
	BXG1068-BSD1	LCSD	ND		ug/m3			70 - 130	30		
Ethylbenzene	BXG1068-BS1	LCS	21.832	21.711	ug/m3	101		70 - 130			
	BXG1068-BSD1	LCSD	21.811	21.711	ug/m3	100	0.1	70 - 130	30		
Methyl t-butyl ether	BXG1068-BS1	LCS	16.797	18.026	ug/m3	93.2		70 - 130			
	BXG1068-BSD1	LCSD	16.779	18.026	ug/m3	93.1	0.1	70 - 130	30		
Toluene	BXG1068-BS1	LCS	18.465	18.842	ug/m3	98.0		70 - 130			
	BXG1068-BSD1	LCSD	18.454	18.842	ug/m3	97.9	0.1	70 - 130	30		
p- & m-Xylenes	BXG1068-BS1	LCS	52.865	43.421	ug/m3	122		70 - 130			
	BXG1068-BSD1	LCSD	52.436	43.421	ug/m3	121	8.0	70 - 130	30		
o-Xylene	BXG1068-BS1	LCS	25.827	21.711	ug/m3	119		70 - 130			
	BXG1068-BSD1	LCSD	25.862	21.711	ug/m3	119	0.1	70 - 130	30		
Total Xylenes	BXG1068-BS1	LCS	78.692	65.132	ug/m3	121		70 - 130			
	BXG1068-BSD1	LCSD	78.297	65.132	ug/m3	120	0.5	70 - 130	30		
4-Bromofluorobenzene (Surrogate)	BXG1068-BS1	LCS	71.6	71.6	ug/m3	100		70 - 130			
	BXG1068-BSD1	LCSD	72.5	71.6	ug/m3	101	1.2	70 - 130			

Report ID: 1000256377

Page 13 of 14

1172 Kansas Avenue Modesto, CA 95354 Reported: 07/17/2014 17:52

Project: Sullins

Project Number: 1262.2

Project Manager: Project Manager

Notes And Definitions

MDL Method De

Method Detection Limit

ND

Analyte Not Detected at or above the reporting limit

PQL

Practical Quantitation Limit

RPD

Relative Percent Difference
PQL's and MDL's are raised due to sample dilution.

A01 Q03

Matrix spike recovery(s) is(are) not within the control limits.

Report ID: 1000256377

Page 14 of 14

Appendix C

Ground Zero Analysis, In Groundwater Monitoring Field Log

	Project Name:	Sullins (L St)			Well I.D.: W-A					
	Project No.:	1262.2					Date:	6/17/2014			
Р	roject Location:	187 N. L Str	eet								
		Livermore, (CA				Samples sent to:	BC Labs			
Time	Cumulative Volume Purged (gal)	Temp C°	EC (μS/cm)	рН	ORP (millivolts)	DO (mg/L)		Remarks			
11:08	0	20.93	1359	6.71	-133.0	0.44	Black				
11:19	6.00	20.69	1352	6.42	-135.0	0.17	Black				
11:38	10.00						Dry				
12:15							Collected Samples	5			
							_				
	Purge Method:		ed Waterra	☐Centrifug	gal pump with o	dedicated tubin	g 🚨 Other				
	Pumping Rate:			·							
Well Con	estructed TD (ft):	63.00		Sample Co	ontainers used:	6	_	X preserved non-preserved			
	* Well TD (ft):		_				-	preserved non-preserved			
Si	It Thickness (ft):		-				-	preserved non-preserved			
	Initial DTW (ft):		-		Neter			preserved non-preserved			
	lumn height (ft):		-		Notes:						
	ing volume (gal): * Final DTW (ft):		-		Sampled By:	A Dorn	Saler Lean				
l .	ng diameter (in):		-		Campica by.	71. 00111	March Idea				
			_				1				
Sample N			Bailer Othe			** = @ sampling]	Purged Water Drummed: ☐ Yes ☒ No			
Gallons	per foot of casing.	2" dia. = 0.17,	3" dia. = 0.38 4" d	ia. = 0.65, 5	5" dia. = 1.02, 6"	6" dia. = 1.48 No. of Drums:					

	Project Name:	Sullins (L St)					Well I.D.:	W-Bs	
	Project No.:	1262.2						Date:	6/17/2014	
Р	roject Location:	187 N. L Str	eet							
		Livermore, C	_		_			Samples sent to:	BC Labs	
Time	Cumulative Volume Purged (gal)	Temp C°	EC (μS/cm)	pН	ORP (millivolts)	DO	(mg/L)		Remarks	
10:07	0.0	21.01	803	7.05	-50.1	-	1.64	Light gray		1
	3.0							Dry - too little water	to pump	
_11:30								Collected Sample		
	Purge Method:	✓ Dedicate	ed Waterra	Centrifuc	al pump with	dedica	ited tubin	a 🚨 Other		·
	Pumping Rate:			_00ag	, a., p ap			<u> </u>		
Well Cor	nstructed TD (ft): * Well TD (ft):]	Sample Co	ntainers used:		6	-	X preserved non-pr	
s	ilt Thickness (ft):	0.38]					# polys	preserved non-pr	eserved
	Initial DTW (ft):	42.39						# polys	preserved non-pr	eserved
Water co	olumn height (ft):	2.23			Notes:					
One cas	ing volume (gal):	3.31]					1		
,	* Final DTW (ft):	42.39			Sampled By:	A. D	orn _	man Jan		
Casi	ng diameter (in):	6"						- 4		
Sample I	Method: s per foot of casing.		Bailer ☐ Othe		* = measured dia. = 1.02, 6" d		sampling]	Purged Water Drummed: No. of Drums:	Yes 🗵 No

Ground Zero Analysis, In Groundwater Monitoring Field Log

	Project Name:	Sullins (L St))					Well I.D.:	W-Es_
	Project No.:	1262.2						Date:	6/17/2014
Р	roject Location:	187 N. L Str	eet						
		Livermore, C						Samples sent to:	BC Labs
Time	Cumulative Volume Purged (gal)	Temp C°	EC (μS/cm)	рН	ORP (millivolts)	DO	(mg/L)		Remarks
								T.	
		:				-			
11:30								Dry - could not colle	ct sample
=									
-									
	Purge Method: Pumping Rate:			⊒ Centrifug	gal pump with c	dedicat	ted tubing	g ☐ Other	
Well Cor	structed TD (ft):	45.00] 9	Sample Co	ntainers used:		6	# VOAs	X preserved non-preserved
	* Well TD (ft):	44.17	_					# amber liters	preserved non-preserved
Si	It Thickness (ft):	0.83						# polys	preserved non-preserved
	Initial DTW (ft):		_						preserved non-preserved
	lumn height (ft):				Notes:	Purge	ed approx	x 0.25 gallons and well	went dry
	ing volume (gal):		_					A. A. D	
	* Final DTW (ft):		1		Sampled By:	A. Do	orn 1	Sylve John	
Casir	ng diameter (in):	2"]					1	
Sample N	Method:	Waterra ⊠	Bailer 🛭 Othe	r 🗖	* = measured	** = @	sampling		Purged Water Drummed: ☐ Yes ☒ No
Gallons	s per foot of casing.	2" dia. = 0.17, 3	B" dia. = 0.38 4" dia	ı. = 0.65, 5"	dia. = 1.02, 6" di	a. = 1.48	8		No. of Drums:

	Project Name:	Sullins (L St)			_	Well I.D.:	W-1
	Project No.:	1262.2				_	Date:	6/17/2014
Р	roject Location:	187 N. L Str	eet _			_		
		Livermore, 0	CA			-	Samples sent to:	BC Labs
Time	Cumulative Volume Purged (gal)	Temp C°	EC (μS/cm)	pН	ORP (millivolts)	DO (mg/L)		Remarks
12:39	0	21.25	1316	6.75	-135.7	0.44	Black, strong odor, ve	ry few sediments
12:44	1.75	21.08	1108	6.70	-104.6	0.22	Black, strong odor, ve	ry few sediments
12:48	3.50	21.06	1099	6.69	-102.0	0.20	Black, strong odor, ve	ry few sediments
12:53	5.25	21.06	1097	6.70	-101.3	0.18	Black, strong odor, ve	ry few sediments
13:30							Collected Samples	
-								
								_
	Purge Method:	□ Dedicate	ed Waterra	☐ Centrifug	gal pump with	dedicated tubin	g 🚨 Other	
	Pumping Rate:	0.38	_gal/min					
Well Con	structed TD (ft):	56.50]	Sample Co	ntainers used:	6	# VOAs	X preserved non-preserved
	* Well TD (ft):]				•	preserved non-preserved
Si	It Thickness (ft):	2.37]				-	preserved non-preserved
	Initial DTW (ft):						-	preserved non-preserved
Water co	lumn height (ft):	10.07			Notes:			
One casi	ng volume (gal):	1.72					1 0 -	
*	* Final DTW (ft):	44.06			Sampled By:	A. Dorn	Saler Igen	
Casir	ng diameter (in):	2"						
Sample M	Method: per foot of casing.		Bailer ☐ Othe			** = @ sampling ia. = 1.48		Purged Water Drummed: ☐ Yes ☒ No No. of Drums:

Ground Zero Analysis, In Groundwater Monitoring Field Log

	Project Name:	Sullins (L St)			Well I.D.: W-1s					
	Project No.:	1262.2						Date:	6/17/2014		
Р	roject Location:	187 N. L Str	eet			_					
		Livermore, (CA					Samples sent to:	BC Labs		
Time	Cumulative Volume Purged (gal)	Temp C°	EC (μS/cm)	рН	ORP (millivolts)	DO	(mg/L)		Remarks		
10:30	0	21.25	1309	6.47	-79.0	C).31	Black		_	
	5.0							Dry - water level too	low to pump		
								_			
11:55								Collected Samples			
	Purge Method: Pumping Rate:			☐ Centrifug	gal pump with o	dedica	ted tubing	g		_	
	structed TD (ft): * Well TD (ft): It Thickness (ft): Initial DTW (ft):	44.53 0.47	5	Sample Co	ntainers used:		_	# amber liters # polys	X preserved non-preserved preserved non-preserved preserved non-preserved preserved non-preserved		
Water co	lumn height (ft):		1		Notes:				preserved nen preserved		
	ng volume (gal):							1 4			
	* Final DTW (ft):	42.35			Sampled By:	A. De	orn	Hader Igen			
Casir	ng diameter (in):	6"									
Sample N			Bailer ⊠ Othe 3" dia. = 0.38 4" dia		* = measured dia. = 1.02, 6" di		sampling		Purged Water Drummed:	No	

	Project Name:	Sullins (L S	t)			Well I.D.: <u>W-3s</u>					
	Project No.:	1262.2						Date:	6/17/2014		
Р	roject Location:	187 N. L St	reet								
	•	Livermore,				Samples sent to: BC Labs					
Time	Cumulative Volume Purged (gal)	Temp C°	EC (μS/cm)	рН	ORP (millivolts)	DO	(mg/L)		Remarks		
		 									
							_				
		<u> </u>									
	Purge Method Pumping Rate			□ Centrifuç	gal pump with o	dedicate	ed tubin	g 🚨 Other			
Well Cor	structed TD (ft)	: 45.00	Ī :	Sample Co	ontainers used:		6	# VOAs	X preserved non-preserved		
	* Well TD (ft)							# amber liters	preserved non-preserved		
Si	It Thickness (ft)	: 1.12						# polys	preserved non-preserved		
	Initial DTW (ft)	43.23						# polys	preserved non-preserved		
	lumn height (ft)		_		Notes	Too sl	nort of w	ater column to sample			
*	ng volume (gal) * Final DTW (ft)	: <u> </u>	_		Sampled By	A. Do	rn –	Seeler Jac			
Casir	ng diameter (in)	: 4"	」					1			
Sample M			Bailer ⊠ Othe 3" dia. = 0.38 4" di		* = measured " dia. = 1.02, 6" d				Purged Water Drummed: ☐ Yes ☒ No No. of Drums:		

Project Name: Sullins (L St)								Well I.D.: MW-104				
	Project No.:	1262.2						Date:	6/17/2014			
Р	roject Location:	187 N. L Str	eet									
		Livermore, C	CA		<u></u>			Samples sent to:	BC Labs			
Time	Cumulative Volume Purged (gal)	Temp C°	EC (μS/cm)	рН	ORP (millivolts)	DO	(mg/L)		Remarks			
13:45	0.00							Brown, strong odo	r, no sediments			
13:53	0.5							Brown, strong odo	r, no sediments			
13:55								Collected Sample				
									-			
	Purge Method:		ed Waterra	Centrifug	al pump with o	dedicat	ed tubin	g 🚨 Other				
	Pumping Rate:	0.06	_gal/min									
Well Con	structed TD (ft): * Well TD (ft):		s	ample Co	ntainers used:		6	_	preserved non-preserved preserved non-preserved			
Si	It Thickness (ft):							-	preserved non-preserved			
	initial DTW (ft):		1					# polys				
Water co	lumn height (ft):				Notes:							
One casi	ng volume (gal):	0.08						1 0				
*	* Final DTW (ft):				Sampled By:	A. Do	orn	Andler Den				
Casir	ng diameter (in):	CMT										
Sample N			Bailer ☐ Othe		* = measured dia. = 1.02, 6" di		sampling]	Purged Water Drummed: Yes No No. of Drums:			

	Project Name:	Sullins (L S	t)			Well I.D.: <u>MW-204</u>				
	Project No.:	1262.2						Date:	6/17/2014	
Р	roject Location:	187 N. L St	reet							
	•	Livermore,				•		Samples sent to:	BC Labs	
	_	Livoimoto,					_	Campios cont to.		
Time	Cumulative Volume Purged (gal)	Temp C°	EC (μS/cm)	pH	ORP (millivolts)	DO	(mg/L)		Remarks	
13:33	0.0							Greenish gray, str	ong odor, no sediments	
13:42	0.75							Greenish gray, str	ong odor, no sediments	
13:45								Collected Samples	s	
	Purge Method:	⊠ Dedicate	ed Waterra	□Centrifuc	gal pump with o	dedicat	ted tubin	a 🗖 Other		
	Pumping Rate:				, a. p ap			g		
		_	_ _				_			
Well Cor	structed TD (ft):		-	Sample Co	ntainers used:		6	_# VOAs	·	
	* Well TD (ft):		-					_# VOAs	preserved non-preserved	
S	It Thickness (ft):		-						preserved non-preserved	
34/-1	Initial DTW (ft):		-		Nata			_ # polys	preserved non-preserved	
	lumn height (ft):		-		Notes:					
	ing volume (gal):		-		Complete Day			Adi D		
	* Final DTW (ft):		-		Sampled By:	A. D	3111	Jan Jav		
L Casii	ng diameter (in):	CMT						-		
Sample N	Method:	Waterra ⊠	Bailer 🗆 Oth	er 🗅	* = measured	** = @	sampling		Purged Water Drummed: ☐ Yes ☒ No	
Gallons	per foot of casing.	2" dia. = 0.17,	3" dia. = 0.38 4" d	ia. = 0.65, 5"	dia. = 1.02, 6" di	a. = 1.4	8		No. of Drums:	

	Project Name:	Sullins (L St)			Well I.D.: <u>MW-205</u>				
	Project No.:	1262.2						Date:	6/17/2014	
Р	roject Location:	187 N. L Str	eet							
		Livermore, 0				•		Samples sent to:	BC Labs	
								'		
	Cumulative Volume	Temp			ORP					
Time	Purged (gal)	C°	EC (μS/cm)	рН	(millivolts)	DO	(mg/L)		Remarks	
12:25	0.00							Light brown, mild	odor, very few sediments	
12:35	0.25	_						Light brown, mild	odor, very few sediments	
12:50								Collected Samples	S	
	Purge Method:	□ Dedicate	ed Waterra	Centrifug	al pump with	dedicat	ted tubin	g 🚨 Other		
	Pumping Rate:	0.03	gal/min							
Well Cor	structed TD (ft):	48.00	. ا	Sample Co	ntainare usad		6	# V/OAs	X preserved non-preserved	
Well Col	* Well TD (ft):			ample 00	mamers used.		0	•	preserved non-preserved	
S	It Thickness (ft):		1					-	preserved non-preserved	
	Initial DTW (ft):								preserved non-preserved	
Water co	lumn height (ft):				Notes				preserved non preserved	
1	ng volume (gal):									
1	* Final DTW (ft):				Sampled By:	A. Do	orn	Andril Don		
1	ng diameter (in):				,,			7		
Sample N	fethod:	Waterra ⊠	Bailer 🗆 Othe	r 🗖	* = measured	** = @	sampling		Purged Water Drummed: ☐ Yes ☒ No	
Gallons	per foot of casing.	2" dia. = 0.17, 3	" dia. = 0.38 4" dia	a. = 0.65, 5"	dia. = 1.02, 6" di	ia. = 1.48	3		No. of Drums:	

	Project Name:	Sullins (L St)			Well I.D.: MW-206				
	Project No.:	1262.2				_		Date: 6/17/2014		
Р	roject Location:	187 N. L Str	eet							
		Livermore, C				•		Samples sent to: BC Labs		
Time	Cumulative Volume Purged (gal)	Temp C°	EC (μS/cm)	рН	ORP (millivolts)	DO	(mg/L)) Remarks		
10:10	0.00							Began purge - clearish black, septic odor, no sediments		
10:22	0.5							Finished purge - clearish black, septic odor, no sediments		
10:30								Collected Samples		
	Purge Method:	☑ Dedicate	nd Waterra]Centrifue	al pump with	dedica	ted tubin	ng 🗖 Other		
	Pumping Rate:			- Ochanog	jai pairip with	acaica	tou tubiii		_	
	- unping riate.	0.04	- ^{9a} ////////							
Well Cor	structed TD (ft):	50.00		Sample Co	ntainers used:	:	6	_# VOAsX preserved non-preserved		
	* Well TD (ft):							# amber liters preserved non-preserved		
s	It Thickness (ft):						_	_ # polys preserved non-preserved		
	Initial DTW (ft):	44.15	_					_ # polys preserved non-preserved		
Water co	lumn height (ft):	5.85	_		Notes:	:				
One cas	ing volume (gal):	0.07					_	1 1 1		
*	* Final DTW (ft):				Sampled By:	A. D	orn	Ander Jean		
Casii	ng diameter (in):	CMT								
Sample M	Method: s per foot of casing.		Bailer ☐ Othe		* = measured dia. = 1.02, 6" d		sampling	Purged Water Drummed:	10	

	Project Name:	Sullins (L St)			Well I.D.: MW-207				
	Project No.:	1262.2				_		Date:	6/17/2014	
Р	roject Location:	187 N. L Str	eet							
		Livermore, (CA			_		Samples sent to:	BC Labs	
Time	Cumulative Volume Purged (gal)	Temp C°	EC (μS/cm)	pН	ORP (millivolts)	DO	(mg/L)		Remarks	
11:40	0.00							Milky brown, mild	odor, no sediments	
12:00	0.25							Milky brown, mild	odor, no sediments	
12:05								Collected Samples	5	
	-					-				
		ļ				<u> </u>				
						<u> </u>				
						<u> </u>				
	Purge Method:	□ Dedicate	ed Waterra	Centrifug	al pump with	dedicate	d tubin	g 🔲 Other		
	Pumping Rate:	0.01	_gal/min							
Well Con	structed TD (ft):] s	Sample Co	ntainers used:	6	3		X preserved non-preserved	
	* Well TD (ft):		_			_			preserved non-preserved	
Si	It Thickness (ft):		_					-	preserved non-preserved	
	Initial DTW (ft):		<u> </u> 						preserved non-preserved	
	lumn height (ft):		-		Notes:	:				
	ng volume (gal):		-					Andin Day		
	* Final DTW (ft):		<u> </u>		Sampled By:	A. Dor	n	2 xullin I den		
Casir	ng diameter (in):	CMT	J					,		
Sample N	Method: per foot of casing.		Bailer ☐ Othe		* = measured	** = @ S8	ampling		Purged Water Drummed: ☐ Yes ☒ No No. of Drums:	
Janoria	por look of cashing.	_ uiu. = 0.17, 0	, 5.a. – 0.00 + die	0.00, 0	a.a. – 1.02, 0 u	u. – 1.40			INO. OF DIGITIS.	

	Project Name:	Sullins (L St	·)			Well I.D.: <u>MW-208</u>					
	Project No.:	1262.2						Date:	6/17/2014		
Р	roject Location:	187 N. L Str	eet								
		Livermore, (Samples sent to:	BC Labs		
Time	Cumulative Volume Purged (gal)	Temp C°	EC (µS/cm)	рН	ORP (millivolts)	DO	(mg/L)		Remarks		
10:35	0.00							Clearish black, str	rong odor, no sedim	ents	
10:51	0.25							Clearish black, str	rong odor, no sedim	ents	
11:10		<u></u>				_		Collected Samples	S		
						_					
	Purge Method: Pumping Rate:			□ Centrifug	gal pump with c	dedica	ted tubin	g 🚨 Other			_
Well Cor	structed TD (ft):	52.00]	Sample Co	ntainers used:		6	# VOAs	X preserved	non-preserved	
	* Well TD (ft):]					# amber liters	preserved	_ non-preserved	
s	It Thickness (ft):	52.00						# polys	preserved	_ non-preserved	
	Initial DTW (ft):	48.86	1					# polys	preserved	_ non-preserved	
Water co	lumn height (ft):	3.14	_		Notes:						
One cas	ing volume (gal):	0.04]					1-9-3			
*	* Final DTW (ft):		_		Sampled By:	A. D	orn -	Lader den			
Casii	ng diameter (in):	CMT									
Sample N	Method:		Bailer ☐ Othe				sampling]	Purged Water Drumn		10

	Project Name:	Sullins (L St)			Well I.D.: <u>MW-304</u>				
	Project No.:	1262.2				_		Date:	6/17/2014	_
Р	roject Location:	187 N. L Str	eet							
		Livermore, C				-		Samples sent to:	BC Labs	_
Time	Cumulative Volume Purged (gal)	Temp C°	EC (μS/cm)	рН	ORP (millivolts)	DO	(mg/L)		Remarks	
13:00	0.0							Light brown, mild o	odor, no sediments	_
13:30	1.25							Light brown, mild o	odor, no sediments	
13:35	l							Collected Samples	S	
									,	
	Purge Method:	▼ Dodicate	nd Waterra	Contrifue	al pump with	dodicat	tad tuhin	g □ Other		
	Pumping Rate:		gal/min	- Centinuç	jai pump with	Jedica	tea tubiri	g 🗖 Other		
	t diliping riate.		- ~ 1							
Well Cor	structed TD (ft):	75.50		Sample Co	ntainers used:		6		X preserved	
	* Well TD (ft):		_					=	preserved r	
Si	It Thickness (ft):		_					_# polys	preserved r	non-preserved
	Initial DTW (ft):	44.33						# polys	preserved r	non-preserved
Water co	lumn height (ft):	31.17			Notes:	:				
One cas	ng volume (gal):	0.35						10		
*	* Final DTW (ft):				Sampled By:	A. D	orn	fraller for	~	
Casir	ng diameter (in):	CMT								
Sample M	Method: per foot of casing.		Bailer □ Othe 3" dia. = 0.38 4" dia		* = measured dia. = 1.02, 6" d				Purged Water Drummed	

Project No.: 1262.2 Date: 6/17/2014 Project Location: 187 N. L Street Livermore, CA Samples sent to: BC Labs Cumulative Volume Temp ORP	
Livermore, CA Samples sent to: BC Labs Cumulative Volume Temp ORP	
Cumulative Volume Temp ORP	
Volume Temp ORP	
Time Purged (gal) C° EC (μS/cm) pH (millivolts) DO (mg/L) Remarks	
12:25 0.0 Clearish brown, mild odor, no sediments	
12:40 0.75 Clearish brown, mild odor, no sediments	
12:45 Collected Samples	
	-
Purge Method: 🗵 Dedicated Waterra 🔲 Centrifugal pump with dedicated tubing 🔲 Other	
Pumping Rate: 0.05 gal/min	
Well Constructed TD (ft): 66.00 Sample Containers used: 6 # VOAs X preserved non-pre	served
* Well TD (ft): # amber liters preserved non-preserved	erved
Silt Thickness (ft): # polys preserved non-preserved	erved
Initial DTW (ft): 44.23# polys preserved non-preserved	erved
Water column height (ft): 21.77 Notes:	
One casing volume (gal): 0.24	
** Final DTW (ft): Sampled By: A. Dorn	
Casing diameter (in): CMT	
Sample Method: Waterra 🗵 Bailer 🗖 Other 📮 🔭 e measured ** = @ sampling Purged Water Drummed: 🖵 Y Sample Method: Sample Method: Other Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sample Method: Sam	es 🗵 No

Gre	ouna Z	ero A	naiysi	s, in	1 <u>C.</u>	Grou	ndwa	ter Monitoring	Field I	70g		
	Project Name:	Sullins (L St	t)			-		Well I	.D.: <u>MW-3</u>	306		
	Project No.:	1262.2				Date: 6/17/2014						
F	Project Location:	187 N. L Str	reet									
		Livermore, (-		Samples sent	t to: <u>BC La</u>	abs		
Time	Cumulative Volume Purged (gal)	Temp C°	EC (μS/cm)	pН	ORP (millivolts)	DO	(mg/L)			Remarks		
_												
-								 				
<u> </u>	-											
	Purge Method: Pumping Rate:			⊒ Centrifuç	gal pump with o	dedicat	ted tubir	ng 🚨 Other				
Well Co	nstructed TD (ft):	66.00		Sample Co	ontainers used:		6	_# VOAs	_ <u>X</u> _	preserved _	non-preserved	
	* Well TD (ft):	66.69						# amber liters				
s	ilt Thickness (ft):							_# polys		preserved	non-preserved	
	Initial DTW (ft):		-					_ # polys				
	olumn height (ft):		-		Notes:	Coulc	not sar	mple - well needs ne	ew tubing			
	sing volume (gal):		-					100				
	** Final DTW (ft):		+		Sampled By:	A. Do	orn /	Mary 182	N.		-	
Casi	ng diameter (in):	CIVIT	_									

* = measured ** = @ sampling

K:\Jobs\S Jobs\Sullins (L St.) 12622\12622\GWM field logs\2014\1st Semi Annual GWM 14.xlsm

Waterra ⊠ Bailer □ Other □

Gallons per foot of casing. 2" dia. = 0.17, 3" dia. = 0.38 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

Sample Method:

Purged Water Drummed: ☐ Yes ☒ No

No. of Drums:

Livermore, CA

ound Zero Anarysis, me.	Groundwater Monitoring Field Log	
Project Name: Sullins (L St)	Well I.D.: <u>MW-307</u>	
Project No.: 1262.2	Date: 6/17/2014	
Project Location: 187 N. L Street		

Samples sent to: BC Labs

Time	Cumulative Volume Purged (gal)	Temp C°	EC (μS/cm)	рН	ORP (millivolts)	DO	(mg/L)	Remarks
11:40	0							Brown, mild odor, no sediments
12:10	0.75							Clearish brown, mild odor, no sediments
12:15								Collected Samples

Purge Method Pumping Rate		ed Waterra 3 gal/min	☐Centrifug	al pump with o	dedicated tub	oing		_		
Well Constructed TD (ft):	:66.00		Sample Co	ntainers used:	6	# VOAs	<u>X</u>	preserved	non-preserv	ed
* Well TD (ft):	:	_				# amber liters		_ preserved	_ non-preserve	d
Silt Thickness (ft):	:					# polys		_ preserved	_ non-preserve	d
Initial DTW (ft):	44.80					# polys		_ preserved	_ non-preserve	d
Water column height (ft)	21.20			Notes:						
One casing volume (gal):	0.23									
** Final DTW (ft):	:			Sampled By:	A. Dorn	Anden Low		_		
Casing diameter (in)	: CMT									
Sample Method:	Waterra ⊠	Bailer 🗆 O	ther 🗆	* = measured	** = @ samplir	19	Purge	ed Water Drumn	ned: 🔲 Yes	⊠ No

Gallons per foot of casing. 2" dia. = 0.17, 3" dia. = 0.38 4" dia. = 0.65, 5" dia. = 1.02, 6" dia. = 1.48

No. of Drums:

Project Name: Sullins (L St)						Well I.D.: <u>MW-308</u>				
Project No.: 1262.2						Date: 6/17/2014				
Project Location: 187 N. L Street						-				
Livermore, CA						Samples sent to: BC Labs				
Time	Cumulative Volume Purged (gal)	Тетр С°	EC (μS/cm)	рН	ORP (millivolts)	DO	(mg/L)		Remarks	
10:35	0.0							Black, strong odor,	, no sediments	
11:05	0.75							Black, strong odor,	, no sediments	
11:10								Collected Samples	3	
	-									
									-	
					_					
Purge Method: ☑ Dedicated Waterra ☐ Centrifugal pump with dedicated tubing ☐ Other										
	Pumping Rate:		gal/min	2 Oeritiilag	gai parrip with	acaicai	ea tabiii	g Ciner		
Well Con	structed TD (ft):		- ~ 7	ample Co	ntainers used:		6	_# VOAs	X preserved non-preserved	
	* Well TD (ft):]					# amber liters	preserved non-preserved	
Si	It Thickness (ft):		1					# polys	preserved non-preserved	
	Initial DTW (ft):	44.54						_ # polys	preserved non-preserved	
Water co	lumn height (ft):	21.46	1		Notes:					
One casi	ng volume (gal):	0.24	4					1 1		
** Final DTW (ft): Sampled By: A. Dorn										
Casing diameter (in): CMT										
Sample Method: Waterra ⊠ Bailer ☐ Other ☐ -= measured									Purged Water Drummed: ☐ Yes ☒ No	
Gallons per foot of casing. 2" dia. = 0.17, 3" dia. = 0.38 4" dia. = 0.65, 5" dia. = 1.02, 6" dia						a. = 1.48	3		No. of Drums:	

Project Name: Sullins (L St)					Well I.D.: <u>MW-404</u>						
Project No.: 1262.2					Date: 6/17/2014						
Р	roject Location:	187 N. L Sti	reet								
Livermore, CA					-		Samples sent to:	BC Labs			
						-					
	Cumulative Volume	Temp			ORP						
Time	Purged (gal)	C°	EC (μS/cm)	рН	(millivolts)	DO	(mg/L)		Remarks		
13:00	0.0							Light brown, mild o	odor, no sediments		
13:23	1.5							Light brown, mild o	odor, no sediments		
13:25								Collected Samples	5		
											_
-		ļ									_
						-					
						-					
<u> </u>											
	Purge Method:	□ Dedicate	ed Waterra	Centrifug	al pump with	dedicat	ed tubin	g 🚨 Other			
	Pumping Rate:	0.07	_gal/min								
Well Cor	structed TD (ft):	81.50] 9	Sample Co	ntainers used:		6	# VOAs	X preserved non	n-preserv	/ed
	* Well TD (ft):							# amber liters	preserved non-p	oreserve	d
Si	It Thickness (ft):							# polys	preserved non-p	oreserve	d
	Initial DTW (ft):	44.44						# polys	preserved non-p	preserve	d
Water co	lumn height (ft):	37.06	1		Notes:						
One casi	ng volume (gal):	0.41									
*	* Final DTW (ft):				Sampled By:	A. Do	orn 🖊	Inden Loren			
Casir	ng diameter (in):	CMT									
Sample N	1ethod:	Waterra ⊠	Bailer Othe	r 🗅	" = measured	** = @ :	sampling		Purged Water Drummed:	Yes	⊠ No
Gallons per foot of casing. 2" dia. = 0.17, 3" dia. = 0.38 4" dia. = 0.65, 5" dia. = 1.02, 6" dia.					ia. = 1.48	3		No. of Drums:			

Appendix D

Vertical Groundwater Gradient Calculation Procedure

Appendix D: Vertical Groundwater Gradient Calculation Procedure

The following procedure is used to calculate vertical groundwater gradients in wells with submerged screens:

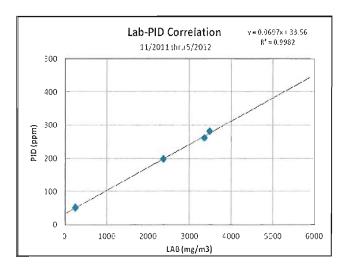
- O Determine the vertical distance between the two measuring devices (wells) by calculating the distance between the mid-point between the screen top and bottom in the deep well (MW-305) and the mid-point between the screen top and bottom in the shallower well (MW-205).
- o Measure the head in both wells used in the calculations.
- o If the lateral distance between the well pair is greater than a few feet, then calculations must be made to correct the down-gradient piezometric head to account for the sloping water table between the wells. This is not necessary in this case because the wells are adjacent to each other in the CMTTM well sets.
- o Divide the difference in head by the difference in vertical distance in the measuring devices to obtain the vertical gradient.

Appendix E

Dual Phase Extraction System Data Correlation

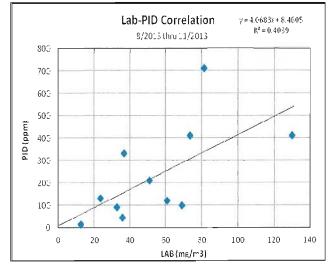
Appendix E: Dual Phase Extraction System Data Correlation

From November 2011 thru July 2013, mass removal calculations were completed utilizing the results of bi-monthly PID analyses and their correlation with four (4) laboratory analyses results of the system influent and effluent vapor streams. A PID reading was collected directly from each of the sample bags for the purpose of correlation. The soil vapor mass removal volume was calculated using laboratory analytical results when available and correlated PID readings when laboratory data was not available. The soil vapor mass removal calculations are provided in Table 7. In the "Lab" column of the table, bold values represent laboratory analytical results, while the remaining values are correlated data.



DATE	Lab Results	PID		
	TPH-G (mg/m³)	(ppm)		
12/8/2011	2380.0	200		
1/5/2012	3360.0	262		
3/8/2012	3490.0	282		
5/16/2012	251.0	51.1		

Starting in August 2013, mass removal calculations were completed utilizing the results of bi-monthly PID analyses and their correlation with eleven (11) laboratory analyses results of the system influent vapor streams, shown in the table below. A PID reading was collected directly from each of the sample bags for the purpose of correlation.



DATE		Lab Results TPH-G (mg/m³)	PID (ppm)
8/22/2013*	~	13	12.5
9/3/2013	SVE-INF UPPER	130	23.8
9/20/2013*	B ⊃	330	36.9
10/11/2013	¥	91	32.9
10/22/2013*	Ϋ́-	210	51.1
11/6/2013	S	44	35.9
8/22/2013	R	410	73.6
9/3/2013*	WE	710	81.4
9/20/2013	2	-	-
10/11/2013*	Ä	99	69.1
10/22/2013	SVE-INF LOWER	410	130
11/6/2013*	15	120	60.9