



HARGIS + ASSOCIATES, INC.

HYDROGEOLOGY • ENGINEERING

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December 30, 2014

VIA FEDERAL EXPRESS STANDARD

Mr. William F. Jeffers, PE
Hazardous Substances Engineer
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL
Southern California Region
9211 Oakdale Avenue
Chatsworth, CA 91311-6520

Re: Data Submittal for Groundwater Monitoring and Groundwater Extraction
and Treatment Pilot Testing, Fourth Quarter 2014, Raytheon Company (Former
Hughes Aircraft Company) Facility, 1901 West Malvern Avenue, Fullerton, California

Dear Mr. Jeffers:

This letter has been prepared for the submittal of groundwater monitoring and groundwater treatment pilot testing data collected during the fourth quarter 2014 for the former Raytheon Company site located at 1901 West Malvern Avenue, Fullerton, California (the Site) (Figure 1). Groundwater monitoring activities were completed in general accordance with the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC)-approved Groundwater Monitoring Workplan and Sampling and Analysis Plan (GMWPSAP) and subsequent addenda (DTSC, 2003 and 2011; Hargis + Associates, Inc. [H+A], 2003, 2011a, and 2011b). Groundwater treatment pilot testing continued throughout the third quarter 2014 in general accordance with the DTSC-approved Groundwater Extraction and Treatment Pilot Testing, Corrective Measures Study Workplan Addendum No. 4A (DTSC, 2009; H+A, 2009a and 2009b). The results of the fourth quarter 2014 quarterly groundwater monitoring and pilot groundwater extraction and treatment system (GETS) operation from September through November 2014 are included in this data submittal.

GROUNDWATER MONITORING

Groundwater monitoring consists of measuring groundwater levels and collecting groundwater samples from monitor wells and piezometers at the Site (Figure 2). Quarterly water level measurements and groundwater samples were collected in November 2014 at all monitor wells and piezometers in general accordance with the GMWPSAP and Addendum No.1 (H+A, 2003 and 2011a) (Table 1).

In accordance with the Corrective Measures Study Workplan Update, the construction and installation of the new pilot treatment system and the connection of existing monitor well MW-29 to the treatment system began in the second quarter 2014. Initial startup of extraction well MW-29 was completed during the fourth quarter;

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groundwater monitoring will be conducted as part of the routine operation and monitoring of the pilot GETS (H+A, 2013a).

Water Level Measurement and Groundwater Sample Collection

Groundwater monitoring included water level measurements in all Site monitor wells, piezometers, and extraction wells (Figures 2 and 3). Monitor well MW-09 was inaccessible and no water level was collected in November 2014. Water levels were measured on November 4th and 6th, 2014 (Table 2).

Groundwater samples were collected during the period from November 4 through November 6, 2014 (Appendix A). Analytical results are summarized in Table 3 and provided in Appendix B. Additional groundwater monitoring was conducted as part of routine operation and monitoring of the pilot GETS. A summary of the pilot GETS operation and monitoring is provided separately below.

Original and field duplicate groundwater samples were analyzed by Advanced Technology Laboratories, Inc., Signal Hill, California (ATL) (Appendix B). Laboratory split groundwater samples were analyzed by Calscience, Garden Grove, California (Appendix B). Chain-of-custody documentation was enclosed with each sample shipment. Results of groundwater sample volatile organic compound (VOC) and 1,4-dioxane analyses have been summarized (Table 3).

Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) samples collected in November 2014 consisted of trip blanks, field duplicates, and laboratory split samples. Trip blanks were provided by ATL. Field duplicate and/or laboratory split samples were collected for analysis of VOCs and 1,4-dioxane from monitor wells MW-29, MW-34B, and EW-01 in November 2014 (Table 3). The relative percent difference (RPD) was calculated between the results of each field duplicate and each laboratory split sample with its corresponding original sample. This data quality assessment indicated that all QA/QC results for groundwater samples are within acceptable criteria, with the following exceptions:

- The RPD calculated between the original and the split laboratory sample results for 1,4-dioxane in monitor well EW-01 in November 2014 exceeded acceptance criteria. Therefore, the detections of 1,4-dioxane in the original, duplicate, and split samples were qualified as estimated "E" (Table 3; Appendix B).

There were no detections of VOCs or 1,4-dioxane in the trip and/or laboratory method blanks analyzed with groundwater samples collected during the November 2014 groundwater monitoring event (Table 3; Appendix B).

The data quality assessment also included review of laboratory QA/QC results. Laboratory QA/QC results are within acceptable criteria.

GROUNDWATER EXTRACTION AND TREATMENT PILOT STUDY

This section summarizes the pilot GETS operation within the three-month period of monitoring conducted during the fourth quarter of 2014. The pilot GETS consists of four groundwater extraction wells, the treatment system, and the disposal system; however, the current phase of pilot testing is operating using only two extraction wells, EW-02 and MW-29. The treatment system processes extracted groundwater through an advanced oxidation unit that utilizes UV light and hydrogen peroxide (UV Ox), followed by a granular activated carbon

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polish prior to disposal to the sanitary sewer. A graphical representation of the system operational time in relation to water level measurements at current extraction wells MW-29 and EW-02 and the previously utilized extraction wells MW-21 and EW-01 has been provided (Figure 4).

Initial startup of the pilot GETS took place on Tuesday, July 8, 2008. From July 2008 through November 2009, the pilot GETS was operated with extraction wells EW-01 and MW-21 operating at approximately 10 gallons per minute (gpm) each. Pilot GETS expansion took place between November 2009 and March 2010 in order to incorporate extraction well EW-02 into the extraction well network. The system maximum flowrate was also increased from 20 gpm to 50 gpm. Beginning in March 2010, the pilot GETS was operated at 50 gpm, entirely from extraction well EW-02. During December 2011, a synthetic media pilot test was started. The purpose of the synthetic media pilot test was to evaluate the efficacy of treating water collected from extraction well MW-21 using a synthetic media for contaminant removal. In order to conduct the synthetic media pilot test, extraction wells EW-02 and MW-21 were operated at approximately 40 gpm and 10 gpm, respectively. The synthetic media pilot test was completed on March 9, 2012, and operation of the pilot GETS was restored to 50 gpm, entirely from extraction well EW-02. A second phase of Pilot GETS expansion took place between March 2014 and August 2014 in order to incorporate extraction well MW-29 into the extraction well network as well as replacing an advanced oxidation unit that used ozone and hydrogen peroxide with a UV Ox system. Extraction wells EW-01 and MW-21 are on standby for the current phase of pilot testing, but may be used for future phases of pilot testing or as part of a full scale pump-and-treat system.

During the fourth quarter 2014, the pilot GETS was operational approximately 25 percent of the available runtime and approximately 1,595,769 gallons of groundwater were treated and discharged to the sanitary sewer (Table 4). Downtime during the fourth quarter of 2014 was associated with maintenance and fine-tuning for expansion and upgrades to the facility. The average monthly discharge flowrate to the sanitary sewer during September 2014 through November 2014 was approximately 12.2 gpm. Since startup of the pilot GETS, approximately 92,416,192 gallons of groundwater was treated at an average flowrate of 27.4 gpm through the end of November 2014 (Table 4).

Current monthly, and quarterly pilot GETS monitoring activities include collecting samples from extraction wells EW-02 and MW-29 in addition to collecting samples at treatment system sampling ports: Influent, Post Particulate Filter, Post UV Ox, Carbon Breakthrough, and Carbon Effluent (Tables 5 and 6; Figure 5). Samples collected during these activities were sent to ATL. Analytical results of the treatment system samples have been summarized (Table 6; Appendix A).

The pilot GETS continues to remove VOCs and 1,4-dioxane from extracted groundwater. The UV Ox advanced oxidation and carbon adsorption treatment units effectively removed VOCs from extracted groundwater. The effluent sample collected from the UV Ox advanced oxidation treatment unit was analyzed for VOCs, and resulted in non-detect values. The operation of the advanced oxidation system continues to be optimized in an attempt to minimize the formation of bromate (Figure 6).

During the fourth quarter of 2014, the pilot GETS removed approximately 0.90 pounds of VOCs and 0.36 pounds of 1,4-dioxane from extracted groundwater. Since startup of the pilot GETS in July 2008, approximately 126.70 pounds of VOCs and 24.80 pounds of 1,4-dioxane have been removed from groundwater through November 2014 (Figure 7).



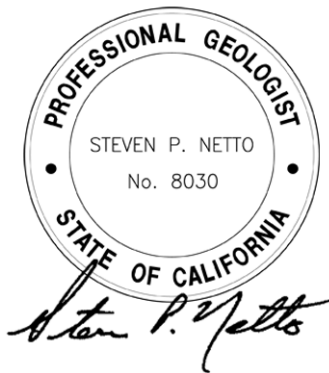
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If you have any questions or require additional information, please contact us at 858-455-6500.

Sincerely,

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Senior Hydrogeologist

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Senior Engineer

SPN/EJH/MER/ama

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REFERENCES

- California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), 2003. Letter to P. Brewer, Raytheon Systems Company, from A. Plaza, DTSC, re Review of Additional Groundwater Assessment Workplan and Groundwater Monitoring Workplan and Sampling and Analysis Plan. May 20, 2003.
- _____, 2009. Letter to P. Brewer, Raytheon Systems Company, from W. Jeffers, DTSC, re Conditional Approval of Groundwater Extraction and Treatment System Pilot Testing, Corrective Measures Study Workplan Addendum No. 4A, Raytheon Company (Former Hughes Aircraft Company), 1901 West Malvern Avenue, Fullerton, California. June 1, 2009.
- _____, 2011. Email from W. Jeffers, DTSC, re: Conditional Approval of Addendum No. 1 to the Ground Water Monitoring Work Plan, Raytheon Fullerton, dated June 7, 2011.
- _____, 2014. Email from P. Pongetti, DTSC, re: Approval of Additional Groundwater Assessment Work Plan Addendum No. 6, Raytheon Fullerton, dated February 10, 2014.
- Hargis + Associates, Inc. (H+A), 2003. Groundwater Monitoring Work Plan and Sampling and Analysis Plan (Revision 1.0), Raytheon Company (former Hughes Aircraft Company), 1901 West Malvern Avenue, Fullerton, California. April 25, 2003.
- _____, 2009a. Groundwater Extraction and Treatment System Pilot Testing, Corrective Measures Study Workplan Addendum No. 4A, Raytheon Company (Former Hughes Aircraft Company), 1901 West Malvern Avenue, Fullerton, California. March 31, 2009.
- _____, 2009b. Letter to W. Jeffers, DTSC, from C. Ross and S. Netto, H+A, re Response to DTSC Comments to Addendums to Workplans. July 27, 2009.
- _____, 2011a. Letter to W. Jeffers, DTSC, re: Addendum No. 1 to the *Groundwater Monitoring Work Plan and Sampling and Analysis Plan (Revision 1.0)*, by Hargis + Associates, Inc., dated April 25, 2003, for the Raytheon Company, (Former Hughes Aircraft Company), 1901 West Malvern Avenue, Fullerton, California. February 11, 2011.
- _____, 2011b. Letter to W. Jeffers, DTSC, re: Amendment A, Addendum No. 1 to the *Groundwater Monitoring Work Plan and Sampling and Analysis Plan (Revision 1.0)*, by Hargis + Associates, Inc., dated April 25, 2003, for the Raytheon Company, (Former Hughes Aircraft Company), 1901 West Malvern Avenue, Fullerton, California. June 16, 2011.
- _____, 2013a. Corrective Measures Study Work Plan Update, Raytheon Company (Former Hughes Aircraft Company), 1901 West Malvern Avenue, Fullerton, California. October 4, 2013.

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- Figure 5. 1,1-Dichloroethylene and 1,4-Dioxane Concentrations in Extraction Wells
- Figure 6. 1,4-Dioxane and Bromate in Influent and Post-Oxidation Samples
- Figure 7. Pilot Groundwater Extraction and Treatment System Mass Removal

Appendices

- Appendix A. Groundwater Sampling Field Forms (Provided on CD only)
- Appendix B. Laboratory Analytical Reports (Provided on CD only)

cc w/encl: (1 copy w-CD)

Mr. Paul Pongetti, Department of Toxic Substances Control, Cypress
Mr. Paul E. Brewer, Raytheon Company
Mr. Carl Bernhardt, California RWQCB, Santa Ana Region
Mr. Dave Mark, Orange County Water District
Mr. Eric Silvers, Regency Centers
Mr. Jeffrey Lochner, Athena Property Management

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(Via Email only)

Mr. Duc Nguyen, Orange County Public Works

TABLE 1
GROUNDWATER MONITORING PROGRAM

WELL IDENTIFIER	HYDROGEOLOGIC ZONE	SAMPLED NOV 2014	SAMPLING FREQUENCY			
			QUARTERLY FEB, MAY, AUG, NOV	SEMIANNUAL FEBRUARY, AUGUST	ANNUAL FEBRUARY	BIENNIAL FEB (EVEN YEARS)
P-07	Perched				VOCs; 1,4-Dioxane	
P-09	Perched				VOCs; 1,4-Dioxane	
MW-35A	Other					VOCs; 1,4-Dioxane
MW-17	A		PIEZOMETER - WATER LEVEL MEASUREMENT ONLY			
MW-18	A			VOCs; 1,4-Dioxane	VOCs; 1,4-Dioxane ^(a)	
MW-19	A					VOCs
MW-22	A					VOCs; 1,4-Dioxane
MW-23	A					VOCs
MW-34A	A			VOCs; 1,4-Dioxane		
MW-35B	A					VOCs; 1,4-Dioxane
MW-38	A	X	VOCs; 1,4-Dioxane			
MW-13	AB				VOCs; 1,4-Dioxane	
MW-15	AB			VOCs		
MW-26A	AB		PIEZOMETER - WATER LEVEL MEASUREMENT ONLY			
MW-26B	AB		PIEZOMETER - WATER LEVEL MEASUREMENT ONLY			
MW-32A	AB			VOCs; 1,4-Dioxane	VOCs; 1,4-Dioxane ^(a)	
EW-01	B	X	VOCs; 1,4-Dioxane			
EW-02*	B	X	VOCs; 1,4-Dioxane			
MW-16	B			VOCs; 1,4-Dioxane		
MW-26C	B	X	VOCs; 1,4-Dioxane			
MW-27	B				VOCs; 1,4-Dioxane	
MW-28	B	X	VOCs; 1,4-Dioxane			
MW-29*	B	X	VOCs; 1,4-Dioxane			
MW-30A	B	X	VOCs; 1,4-Dioxane			
MW-31	B	X	VOCs; 1,4-Dioxane			
MW-32B	B	X	VOCs; 1,4-Dioxane			
MW-33	B	X	VOCs; 1,4-Dioxane			
MW-34B	B	X	VOCs; 1,4-Dioxane			
MW-35C	B	X	VOCs; 1,4-Dioxane	VOCs; 1,4-Dioxane ^(a)		
MW-36	B	X	VOCs; 1,4-Dioxane			
MW-39	B	X	VOCs; 1,4-Dioxane			
MW-40	B	X	VOCs; 1,4-Dioxane			
MW-41	B	X	VOCs; 1,4-Dioxane			
MW-21	BC	X	VOCs; 1,4-Dioxane			
MW-08	BC	X	VOCs; 1,4-Dioxane			
MW-30B	BC	X	VOCs; 1,4-Dioxane			
MW-34C	BC			VOCs; 1,4-Dioxane		
MW-09	C			VOCs; 1,4-Dioxane	VOCs; 1,4-Dioxane ^(a)	
MW-24	C				VOCs; 1,4-Dioxane	
MW-32C	C			VOCs; 1,4-Dioxane	VOCs; 1,4-Dioxane ^(a)	
MW-06	D				VOCs	
MW-20	D			VOCs; 1,4-Dioxane		
MW-25	D		WATER LEVEL MEASUREMENT ONLY			
MW-37	D	X	VOCs; 1,4-Dioxane			

FOOTNOTES

(a)= Reduced sampling schedule proposed in the 2013/1014 Annual Report (H+A, 2014)

* = Extraction well monitored monthly as part of the Groundwater Extraction and Treatment System Pilot Testing

VOCs = Volatile organic compounds



TABLE 2

**GROUNDWATER LEVELS
FOURTH QUARTER 2014**

Well Identifier	Date Measured	Reference Point Elevation (a) (feet msl)	Depth to Water (feet bls)	Water Level Elevation (feet msl)	Remediation System On
<u>Regional Groundwater System Monitor and Extraction Wells</u>					
MW-06	11/04/14	184.70	186.64	-1.94	
MW-08	11/04/14	155.91	150.19	5.72	
MW-09	11/04/14	180.10	180.10	0.00	
MW-13	11/04/14	141.84	150.59	-8.75	
MW-15	11/04/14	144.95	153.31	-8.36	
MW-16	11/04/14	142.40	155.20	-12.80	
MW-17	11/04/14	142.70	156.45	-13.75	
MW-18	11/04/14	142.32	156.98	-14.66	
MW-19	11/04/14	142.06	156.81	-14.75	
MW-20	11/04/14	184.19	182.39	1.80	
MW-21	11/04/14	141.18	150.91	-9.73	
MW-22	11/04/14	138.65	152.76	-14.11	
MW-23	11/04/14	137.33	152.51	-15.18	
MW-24	11/04/14	142.83	149.10	-6.27	
MW-25	11/04/14	142.64	154.67	-12.03	
MW-26A	11/04/14	137.04	145.58	-8.54	
MW-26B	11/04/14	137.05	145.01	-7.96	
MW-26C	11/06/14	137.22	160.01	-22.79	
MW-27	11/04/14	137.16	159.09	-21.93	
MW-28	11/04/14	140.77	163.51	-22.74	
MW-29	11/04/14	139.81	195.90	-56.09	
	11/03/14	139.81	193.62	-53.81	
MW-30A	11/04/14	129.44	152.83	-23.39	
MW-30B	11/04/14	129.39	147.92	-18.53	



TABLE 2

**GROUNDWATER LEVELS
FOURTH QUARTER 2014**

Well Identifier	Date Measured	Reference Point Elevation (a) (feet msl)	Depth to Water (feet bls)	Water Level Elevation (feet msl)	Remediation System On
<u>Regional Groundwater System Monitor and Extraction Wells (continued)</u>					
MW-31	11/04/14	119.60	140.95	-21.35	
MW-32A	11/04/14	92.88	116.71	-23.83	
MW-32B	11/04/14	92.89	116.03	-23.14	
MW-32C	11/04/14	92.88	105.10	-12.22	
MW-33	11/04/14	83.19	107.90	-24.71	
MW-34A	11/04/14	153.25	172.43	-19.18	
MW-34B	11/04/14	153.11	178.79	-25.68	
MW-34C	11/04/14	153.29	174.43	-21.14	
MW-35A	11/04/14	93.57	97.37	-3.80	
MW-35B	11/04/14	93.56	110.32	-16.76	
MW-35C	11/04/14	93.55	116.33	-22.78	
MW-36	11/04/14	86.65	112.18	-25.53	
MW-37	11/04/14	155.60	171.21	-15.61	
MW-38	11/04/14	154.90	176.59	-21.69	
MW-39	11/04/14	84.25	109.61	-25.36	
MW-40	11/04/14	123.40	142.65	-19.25	
MW-41	11/04/14	155.60	182.14	-26.54	
EW-01	11/04/14	141.07	161.72	-20.65	
EW-02	11/03/14	132.97	161.56	-28.59	
	11/04/14	132.97	162.10	-29.13	
<u>Perched Zone Water Levels</u>					
P-07	11/04/14	142.31	113.00	29.31	
P-09	11/04/14	183.86	120.83	63.03	

FOOTNOTES

(a) Reference point elevations are relative to City of Fullerton datum.
 bls = Below land surface
 msl = Mean sea level

TABLE 3

**PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
FOURTH QUARTER 2014**

.....Concentration (micrograms per liter).....																
VOLATILE ORGANIC COMPOUNDS (FEDERAL MCL/CALIFORNIA MCL)															Semi-VOCs	
Well Identifier / Sample Identifier	Date Sampled	QA Code	Benzene (5/1)	Carbon Tetrachloride (5/0.5)	Chloroform (80/80)	1,1-DCA (-/5)	1,2-DCA (5/0.5)	1,1-DCE (7/6)	cis-1,2-DCE (70/6)	PCE (5/5)	1,1,1-TCA (200/200)	1,1,2-TCA (5/5)	TCE (5/5)	TCFM (-/150)	Toulene (1,000/150)	1,4-Dioxane (3*/1**)
Regional Groundwater System Monitor and Extraction Wells																
MW-08	11/11/14	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.7	0.68	< 0.50	< 0.50	< 0.50	13	< 0.50	< 0.50	<0.20
MW-08 Historical Range***			< 0.50 - 0.95	< 0.50 - <1.0	< 0.50 - 0.86	< 0.50 - 5.1	< 0.50 - 0.99	< 0.50 - 500	< 0.50 - 13	< 0.50 - 1.3	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - 480	< 0.50 - 1.0	< 0.50 - < 5.0	<0.20 - 130
MW-21	11/4/2014	ORG	< 0.50	< 0.50	< 0.50	4.6	0.72	350	1.1	0.85	< 0.50	1.5	19	< 0.50	< 0.50	54
MW-21 Historical Range***			< 0.50 - < 25	< 0.50 - 1.9	< 0.50 - 4.6	< 0.50 - 71	< 0.50 - 8.9	200 - 4,900	< 0.50 - 2.4	< 0.50 - 12	< 0.50 - 2.0	< 0.50 - 27	0.96 - 46	< 0.50 - 0.53	< 0.50 - < 10	11 - 1,100
MW-26C	11/11/14	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-26C Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 1.7	< 0.50	< 0.50 - 120	< 0.50	< 0.50 - 0.79	< 0.50	< 0.50 - 0.77	< 0.50	< 0.50	< 0.50 - 22	< 0.20 - 55 E
MW-28	11/05/14	ORG	< 0.50	< 0.50	< 0.50	0.50	< 0.50	43	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	12
MW-28 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 0.94	< 0.50	<0.50 - 76 E	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 - 19
MW-29	11/03/14	ORG	0.57	< 0.50	< 0.50	2.6	0.55	240	< 0.50	0.78	< 0.50	0.89	4.6	1.1	< 0.50	97
Historical High/Low MW-29 Historical Range***			< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - 0.80	1.1 - 9.2	< 0.50 - 1.4	99 - 900 E	< 0.50 - 0.61	< 0.50 - 6.6	< 0.50 - < 5.0	< 0.50 - 2.3	0.58 - 8.3	< 0.50 - 1.9	< 0.50 - < 5.0	29 - 301
MW-30A	11/05/14	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	4.8	< 0.50	< 0.50	< 0.50	< 0.50	0.60	< 0.50	< 0.50	1.9
MW-30A Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 2.9	< 0.50 - 0.67	< 0.50 - 270	< 0.50	< 0.50 - 0.58	< 0.50	< 0.50 - 1.1	< 0.50 - 1.9	< 0.50	< 0.50	< 0.20 - 95
MW-30B	11/05/14	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	18	4.1	< 0.50	< 0.50	< 0.50	81	< 0.50	0.86	0.54
MW-30B Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<0.50 - 22	< 0.50 - 6.0	< 0.50	< 0.50	< 0.50	< 0.50 - 100	< 0.50	< 0.50 - 4.5	< 0.20 - 28 E
MW-31	11/06/14	ORG	< 0.50	< 0.50	< 0.50	2.1	< 0.50	210	< 0.50	< 0.50	< 0.50	< 0.50	9.1	< 0.50	< 0.50	6.8
MW-31 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 3.7	< 0.50	25 - 430	< 0.50 - 1.2	< 0.50 - 2.5	< 0.50	< 0.50 - 1.2	2.2 - 21	< 0.50	< 0.50 - 1.0	<0.20 - 16
MW-32B	11/05/14	ORG	< 0.50	< 0.50	< 0.50	0.87	< 0.50	110	4.4	< 0.50	< 0.50	< 0.50	54	< 0.50	< 0.50	4.5
Historical High/Low MW-32B Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 1.4	< 0.50	16 - 160	1.9 - 5.7	< 0.50	< 0.50	< 0.50	24 - 75	< 0.50	< 0.50	High 0.39 - 3.4
MW-33	11/05/14	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.1	< 0.50	< 0.50	< 0.20
MW-33 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.7 - 12	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 1.6	< 0.50	< 0.50 - 1.4	< 0.20 - < 2.0
MW-34B	11/05/14	ORG	< 0.50	< 0.50	< 0.50	2.2	< 0.50	210	< 0.50	< 0.50	< 0.50	0.97	0.66	< 0.50	< 0.50	57
MW-34B	11/05/14	DUP	< 0.50	< 0.50	< 0.50	2.1	0.55	200	< 0.50	< 0.50	< 0.50	0.82	0.56	< 0.50	< 0.50	54
MW-34B	11/05/14	SPT	< 0.50	< 0.50	<1.0	2.0	<0.50	180	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<1.0	54
MW-34B Historical Range***			< 0.50 - <5.0	< 0.50 - <5.0	< 0.50 - <5.0	< 0.50 - 9.8	< 0.50 - 1.1	20 - 1,100	< 0.50 - <5.0	< 0.50 - 1.1	< 0.50 - 1.0	< 0.50 - 2.6	< 0.50 - 1.6	< 0.50 - <5.0	< 0.50 - 2.6	4.1 - 250
MW-35C	11/06/14	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-35C Historical Range***			< 0.50	< 0.50	< 0.50 - 120	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 - < 2.0
MW-36	11/05/14	ORG	< 0.50	< 0.50	< 0.50	1.4	< 0.50	140	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<0.50 - 5.9	8.2
MW-36 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 1.7	< 0.50	2.9 - 140	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<0.50 - 5.9	< 0.20 - 14

TABLE 3

PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
FOURTH QUARTER 2014

.....Concentration (micrograms per liter).....																
VOLATILE ORGANIC COMPOUNDS (FEDERAL MCL/CALIFORNIA MCL)															Semi-VOCs	
Well Identifier / Sample Identifier	Date Sampled	QA Code	Benzene (5/1)	Carbon Tetrachloride (5/0.5)	Chloroform (80/80)	1,1-DCA (-/5)	1,2-DCA (5/0.5)	1,1-DCE (7/6)	cis-1,2-DCE (70/6)	PCE (5/5)	1,1,1-TCA (200/200)	1,1,2-TCA (5/5)	TCE (5/5)	TCFM (-/150)	Toulene (1,000/150)	1,4-Dioxane (3*/1**)
<u>Regional Groundwater System Monitor and Extraction Wells (cont'd)</u>																
MW-37	11/06/14	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-37 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 0.66	< 0.50	<0.50 - 0.73	<0.20
MW-38	11/05/14	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-38 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	<0.20
MW-39	11/06/14	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.64	< 0.20
MW-39 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 1.3	<0.20
MW-40	11/06/14	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-40 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-41	11/05/14	ORG	< 0.50	< 0.50	0.72	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
Historical High/Low					High											
MW-41 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 2.6	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 - 0.49
EW-01	11/04/14	ORG	<2.0	<2.0	<2.0	16	4.0	960	<2.0	4.3	<2.0	9.0	3.3	<2.0	<2.0	990 E
EW-01	11/04/14	DUP	<2.0	<2.0	<2.0	16	4.2	1,000	<2.0	3.6	<2.0	9.0	3.0	<2.0	<2.0	920 E
EW-01	11/04/14	SPT	<0.50	0.57	1.2	16	3.6	720	<1.0	2.3	<1.0	8.8	2.7	<10	<1.0	1,800 E
Historical High/Low										High			High			High
EW-01 Historical Range***			< 0.50 - 2	< 0.50 - 0.55	< 0.50 - 1.2	< 0.50 - 16	< 0.50 - 4.0	< 0.50 - 1,600 E	< 0.50 - 0.52	< 0.50 - 3.8	< 0.50 - < 2.5	< 0.50 - 10	< 0.50 - 3.1	< 0.50 - 0.61	< 0.50 - 4.6	5.1 - 970
EW-02	11/03/14	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	22	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	6.3
EW-02 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 1.5	< 0.50	5.2 - 160	< 0.50	< 0.50	< 0.50	< 0.50 - 0.59	< 0.50	< 0.50	< 0.50 - 0.85	5.1 - 48
<u>QUALITY ASSURANCE/QUALITY CONTROL SAMPLES</u>																
TB-110314	11/03/14	TB	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA
TB-110414A	11/04/14	TB	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA
TB-110414B	11/04/14	TB-SPT	< 0.50	< 0.50	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 10	< 1.0	NA
TB-110614	11/06/14	TB	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA
TB-111114	11/11/14	TB	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	NA

NOTE: Detections are shown in **BOLD** type.

FOOTNOTES

1,1-DCA = 1,1-Dichloroethane
1,2-DCA = 1,2-Dichloroethane
1,1-DCE = 1,1-Dichloroethene
cis-1,2-DCE = cis-1,2-Dichloroethene
PCE = Tetrachloroethene
1,1,1-TCA = 1,1,1-Trichloroethane
1,1,2-TCA = 1,1,2-Trichloroethane

TCE = Trichloroethene
TCFM = Trichlorofluoromethane
(<) = Less than; the value is the Limit of Detection for that compound
* = 1,4-Dioxane Action Level of 3 ug/l
** = California Notification Level for 1,4-Dioxane of 1 ug/l
*** = Historical Range determined using original samples exclusively
Semi-VOCs = Semivolatile organic compounds

NA = Not analyzed for constituent
DUP = Field duplicate sample
ORG = Original sample
E = Data qualified as Estimated in accordance with quality control criteria.
TB = Trip blank sample
ug/l = Micrograms per liter
MCL = Maximum Contaminant Level
QA = Quality Assurance
SPT = Split sample

TABLE 4
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM OPERATIONAL SUMMARY

OPERATIONAL PERIOD (MONTH/QUARTER/YEAR)	WELLFIELD PRODUCTION ^(a) (gallons)	AVERAGE DISCHARGE RATE ^(b) (gpm)	AVERAGE OPERATIONAL DISCHARGE RATE ^(c) (gpm)	OPERATIONAL HOURS DURING OPERATIONAL PERIOD	HOURS IN OPERATIONAL PERIOD	% OPERATIONAL
2008^(d)	3,659,562	13.8	18.2	3,358	4,416	76%
2009	5,787,848	11.0	18.1	5,319	8,760	61%
2010	14,295,261	27.2	46.4	5,131	8,760	59%
2011	20,456,899	38.9	45.8	7,442	8,760	85%
2012^(e)	19,378,122	40.2	47.2	6,850	8,040	85%
2013^(f)	21,148,029	40.2	45.7	7,713	8,760	88%
Dec-13	1,948,113	43.6	46.7	695	744	93%
Jan-14	2,021,062	45.3	46.5	725	744	97%
Feb-14	1,622,421	40.2	46.0	588	672	88%
1Q2014	5,591,595	43.1	46.4	2,007	2,160	93%
Mar-14	395,641	8.9	46.1	143	744	19%
Apr-14	0	0.0	0.0	0	720	0%
May-14	0	0.0	0.0	0	744	0%
2Q2014	395,641	3.0	46.1	143	2,208	6%
Jun-14	0	0.0	0.0	0	720	0%
Jul-14	0	0.0	0.0	0	744	0%
Aug-14	107,466	2.4	49.5	36	744	5%
3Q2014	107,466	0.8	49.5	36	2,208	2%
Sep-14	8,054	0.2	46.8	3	720	0%
Oct-14	338,935	7.6	47.8	118	744	16%
Nov-14	1,248,780	28.9	48.1	433	720	60%
4Q2014	1,595,769	12.2	48.0	554	2,184	25%
SINCE INCEPTION	92,416,192	27.4	40.0	38,553	56,256	69%

Notes:

(a) Based on Effluent totalizer readings from CEFF, which also includes relatively small amounts of monitor well purge water from quarterly sampling events, well installations, and aquifer testing.

(b) Total volume of water treated during the operational period divided by the total number of minutes in that operational period.

(c) Total volume of water treated during the operational period divided by the minutes of operation in that operational period.

(d) Operational period beginning 7/1/2008 (first month of system operation).

(e) 2012 Calendar year is from 1/1/2012 through 11/30/2012.

(f) 2013 Calendar year is from 12/1/2012 through 11/30/2013.

gpm = gallons per minute

Refer to previous quarterly reports for detail of 2008 thru 2013 operational summary

Treatment of groundwater from EW-02 initiated in 2010

CEFF = Carbon effluent

TABLE 5
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM SAMPLING SCHEDULE

				SAMPLE FREQUENCY AND LOCATION																		
				Daily Samples ¹ : Days 1-5					Weekly Samples ¹ : Weeks 1-4					Monthly Samples: Week 5+					Quarterly Samples: Week 1+			
				System Influent (INF)	Post-Filter (PF)	Post-Oxidation (POX)	Carbon Breakthrough (CBT) ³	Post-Carbon (CEFF)	System Influent (INF)	Post-Filter (PF)	Post-Oxidation (POX)	Carbon Breakthrough (CBT) ³	Post-Carbon (CEFF)	Extraction Wells (Well ID) ²	System Influent (INF)	Post-Filter (PF)	Post-Oxidation (POX)	Carbon Breakthrough (CBT) ³	Post-Carbon (CEFF)	Extraction Wells (Well ID) ²	System Influent (INF)	Post-Oxidation (POX)
COMPOUND(S) / CONSTITUENT	ANALYTICAL METHOD	SAMPLE CONTAINER	REPORTING DETECTION LIMITS (milligrams per liter)																			
COMPOUNDS/CONSTITUENTS NORMALLY REQUIRED AS PART OF NPDES OR WDR PERMITS, PURSUANT TO CRWQCB REGION 8 ORDER NO. R8-2003-008E																						
Volatile Organic Compounds	EPA 8260B	3 - 40 mL VOA, HCl	QAPP ⁴	X		X	X	X		X		X	X	X		X	X		X	X	X	
1,4-Dioxane	EPA 8270 Modified	1 L Amber	0.002	X						X						X	X					
1,4-Dioxane	EPA 8270 SIM	1 L Amber	0.0002			X						X						X				
Total Suspended Solids	SM2540D	250 mL poly	10																			
Total Dissolved Solids	SM2540C	250 mL poly	10																			
SELECTED METALS																						
Dissolved Metals (Iron, Manganese, Calcium, Sodium, Magnesium)	EPA 6010B	500 mL poly	QAPP ⁴	(a)																X	X	
Selenium	EPA 6010B	500 mL poly, HNO ₃	QAPP ⁴																	X	X	
SELECTED INORGANIC CONSTITUENTS																						
Hydroxide Alkalinity	SM2320B	250 mL poly	2.0	(a)														X	X			
Bicarbonate Alkalinity	SM2320B	250 mL poly	2.0	(a)														X	X			
Carbonate Alkalinity	SM2320B	250 mL poly	2.0	(a)														X	X			
Total Alkalinity	SM2320B	250 mL poly	2.0	(a)														X	X			
BROMATE EVALUATION																						
Bromate	EPA 317.0	125 mL poly	0.0005			X						X						X				
Bromide	EPA 300.0	125 mL poly	0.05	(a)						(a)						X	X					
OTHER CONSTITUENTS/COMPOUNDS																						
Total Organic Carbon	SM5310B	3 - 40 mL VOA, HCl	3.0	(a)														X	X			
Anions (Chloride, Sulfate, Nitrate, Nitrite, and Phosphate)	EPA 300.0	500 mL poly	Varies	(a)																	X	X
Chemical Oxygen Demand	EPA 410.4	125 mL poly, H ₂ SO ₄	5.0	(a)																	X	X
UV Absorption (UVA) @254nm	EPA 415.3	250 mL Amber	N/A	(a)														X			X	X
Field Parameters																						
Dissolve Oxygen (DO)	N/A	N/A	N/A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Electrical Conductance (EC)	N/A	N/A	N/A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Redox Potential	N/A	N/A	N/A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Temperature	N/A	N/A	N/A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
pH	N/A	N/A	N/A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Turbidity	N/A	N/A	N/A	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Flow-Meter	N/A	N/A	N/A	X						X					X							
Residual Hydrogen Peroxide	N/A	N/A	N/A			(a)	(a)	(a)				X	X	X				X	X	X		

FOOTNOTES

(a) Only one sample to be collected during sampling period.

¹ Daily and weekly samples collected during the first month of operation will be repeated after major modifications to system equipment or operating parameters, as detailed in the Workplan.

² If more than one extraction well is in operation, combined influent samples will be collected in addition to extraction wellhead samples, with the same sampling schedule as the extraction wellheads.

³ Carbon breakthrough will be collected from the effluent of the first carbon unit in series; when breakthrough of the first unit is detected, the breakthrough sample will be collected from the effluent of the second carbon unit in series.

⁴ QAPP, Quality Assurance Project Plan, Appendix B of Additional Groundwater Assessment Workplan, Hargis + Associates, Inc., April 25, 2003.

CRWQCB = California Regional Water Quality Control Board, Santa Ana Region 8

NPDES = National Pollutant Discharge Elimination System

WDR = Waste Discharge Requirement

N/A = Not applicable

mL = Milliliter

VOA = Volatile organic analysis

HCl = Hydrochloric acid

HNO₃ = Nitric acid

H₂SO₄ = Sulfuric acid

nm = Nanometers

EPA = U.S. Environmental Protection Agency

SIM = Selected ion monitoring

SM = Standard Method

L = Liter

poly = High density polyethylene bottle

Amber = Amber glass bottle

TABLE 6

**SELECT COMPOUNDS MONITORED IN
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM SAMPLES
FOURTH QUARTER 2014**

Compound	Date	Units	MW-21	MW-29	EW-01	EW-02	INF*	PF	POX	CBT	CEFF
1,1,2-Trichloroethane (5 ug/L MCL)	11/03/14	ug/L	--	0.89	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	11/04/14	ug/L	1.5	--	9.0	--	--	--	--	--	--
1,1-Dichloroethane (5 ug/L MCL)	11/03/14	ug/L	--	2.6	--	<0.50	0.65	--	0.61	<0.50	<0.50
	11/04/14	ug/L	4.6	--	16	--	--	--	--	--	--
1,1-Dichloroethene (6 ug/L MCL)	11/03/14	ug/L	--	240	--	22	66	--	0.87	<0.50	<0.50
	11/04/14	ug/L	350	--	960	--	--	--	--	--	--
1,2-Dichloroethane (0.5 ug/L MCL)	11/03/14	ug/L	--	0.55	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	11/04/14	ug/L	0.72	--	4.0	--	--	--	--	--	--
cis-1,2-Dichloroethene (6 ug/L MCL)	11/03/14	ug/L	--	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	11/04/14	ug/L	1.1	--	<2.0	--	--	--	--	--	--
Tetrachloroethene (5 ug/L MCL)	11/03/14	ug/L	--	0.78	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
	11/04/14	ug/L	0.85	--	4.3	--	--	--	--	--	--
Trichloroethene (5 ug/L MCL)	11/03/14	ug/L	--	4.6	--	<0.50	0.97	--	<0.50	<0.50	<0.50
	11/04/14	ug/L	19	--	3.3	--	--	--	--	--	--
1,4-Dioxane (1 ug/L California Notification Level)	11/03/14	ug/L	--	97	--	6.3	27	--	11	--	--
	11/04/14	ug/L	54	--	990 E	--	--	--	--	--	--
	11/19/14	ug/L	--	--	--	--	--	32	<0.20	--	--
Bromide	11/03/14	mg/L	--	0.47	--	0.22	0.27	--	--	--	--
Bromate (10 ug/L MCL)	11/03/14	ug/L	--	--	--	--	--	--	0.4	--	--
Total Non-Filterable Residue	11/03/14	mg/L	--	--	--	--	--	<1.0	--	--	--
Total Filterable Residue (500 mg/L MCL)	11/03/14	mg/L	--	--	--	--	--	--	--	--	--

FOOTNOTES

MCL = Maximum Contaminant Level or Drinking Water Action Level, if applicable

ug/L = Micrograms per liter

mg/L = Milligrams per liter

(--) = Not scheduled for performance monitoring

(<) = Less than; the numerical value is the Limit of Detection for that compound

INF* = Influent (same as EW-02, when active)

PF = Post Particulate Filter

POX = Post Hipox Oxidation

CBT = Carbon Breakthrough

CEFF = Carbon Effluent

FIGURE 1. SITE LOCATION

Oct 08, 2014 - 3:14pm ESS - T: 2014\500-599\532 Raytheon\Hydrogeology\H+A BaseMaps\410-9312.dwg

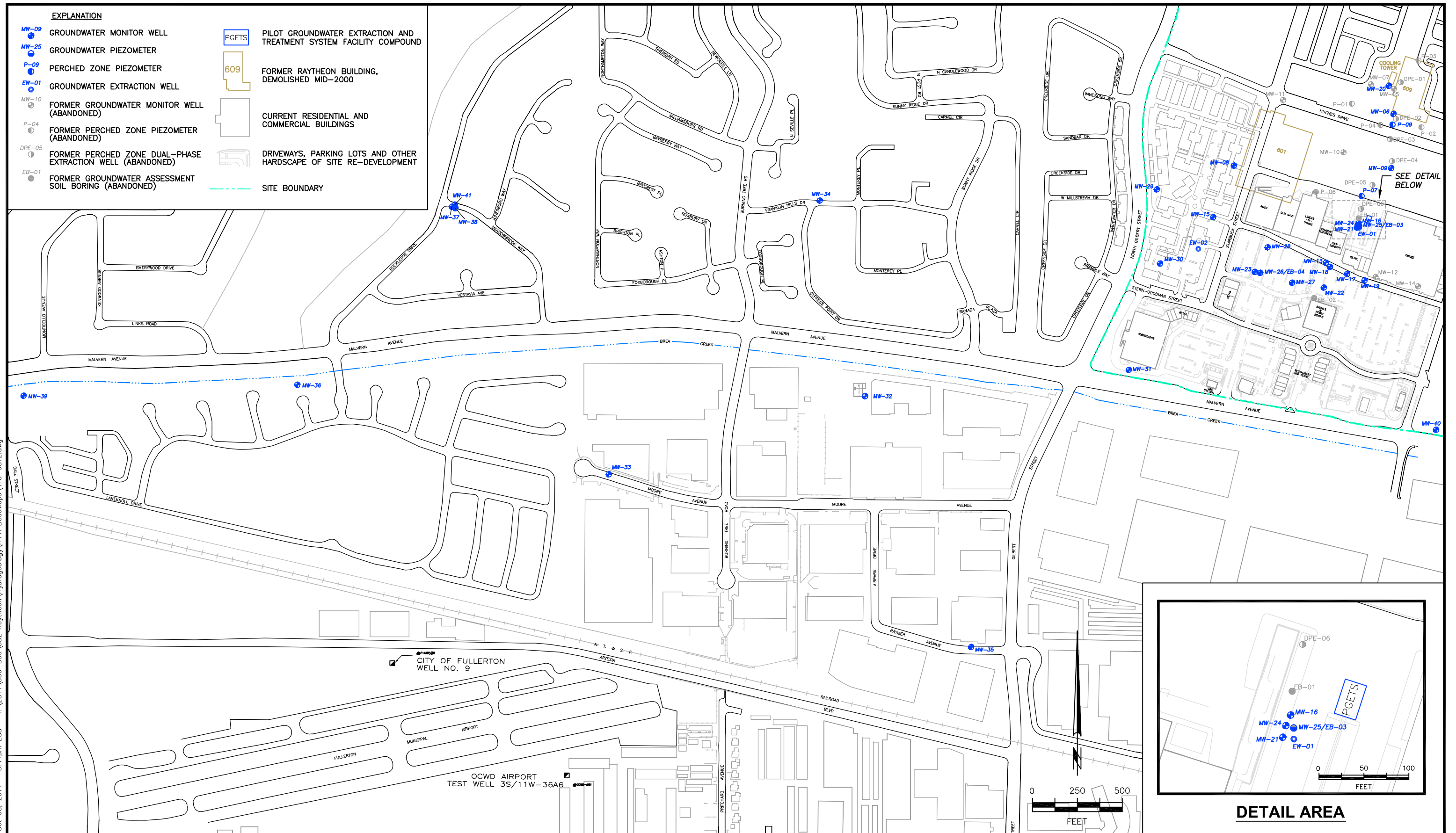


FIGURE 2.
WELL AND PIEZOMETER LOCATIONS

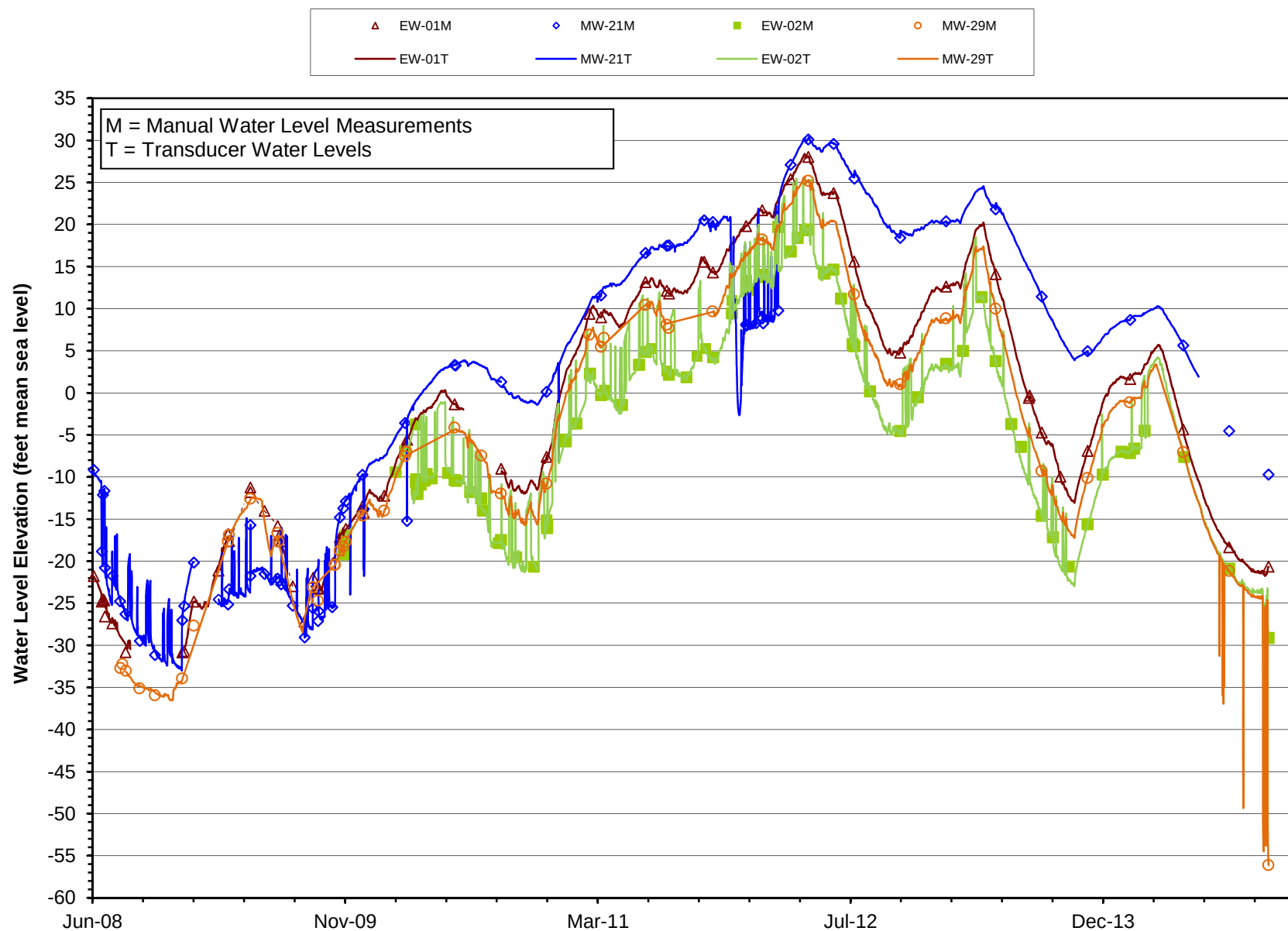


FIGURE 4.
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM OPERATION
AND EXTRACTION WELL WATER LEVELS

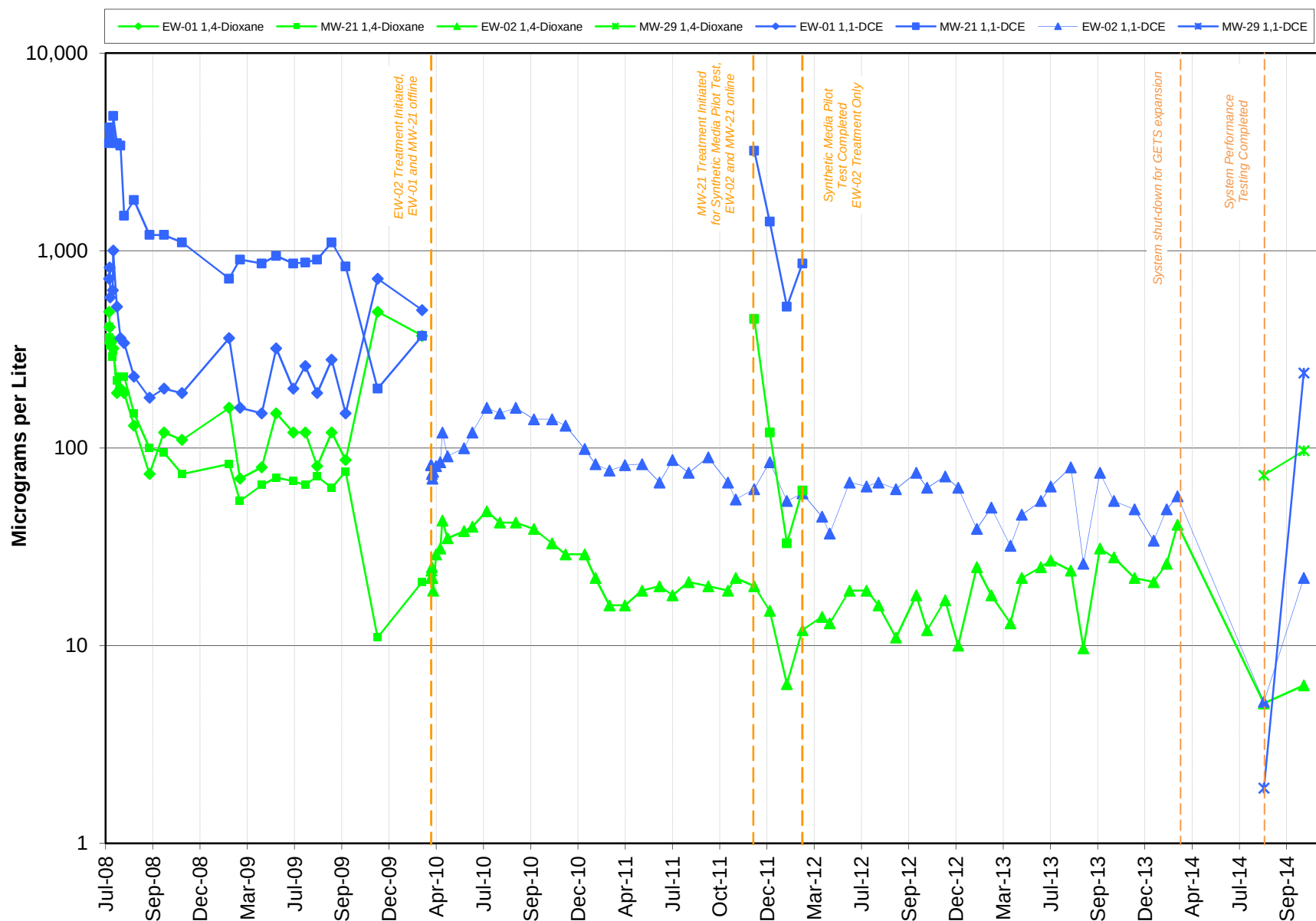


FIGURE 5.
1,1-DICHLOROETHYLENE AND 1,4-DIOXANE CONCENTRATIONS IN
EXTRACTION WELLS

1,1-DCE = 1,1-Dichloroethylene

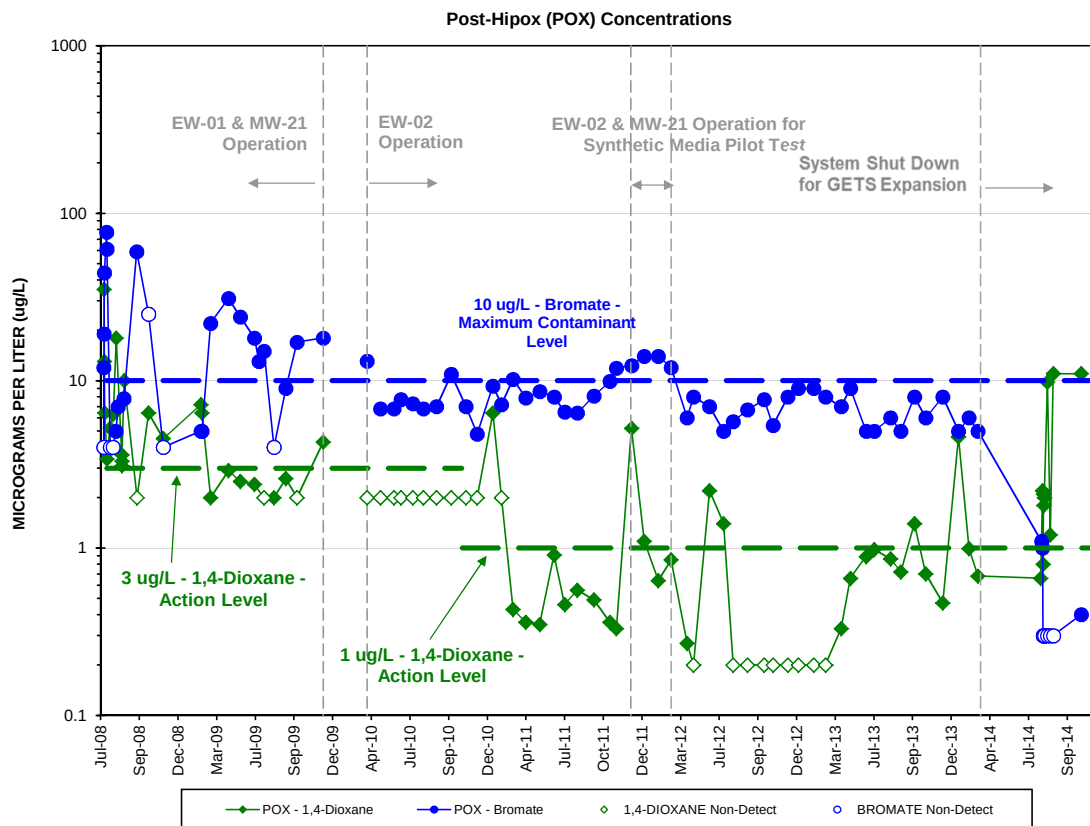
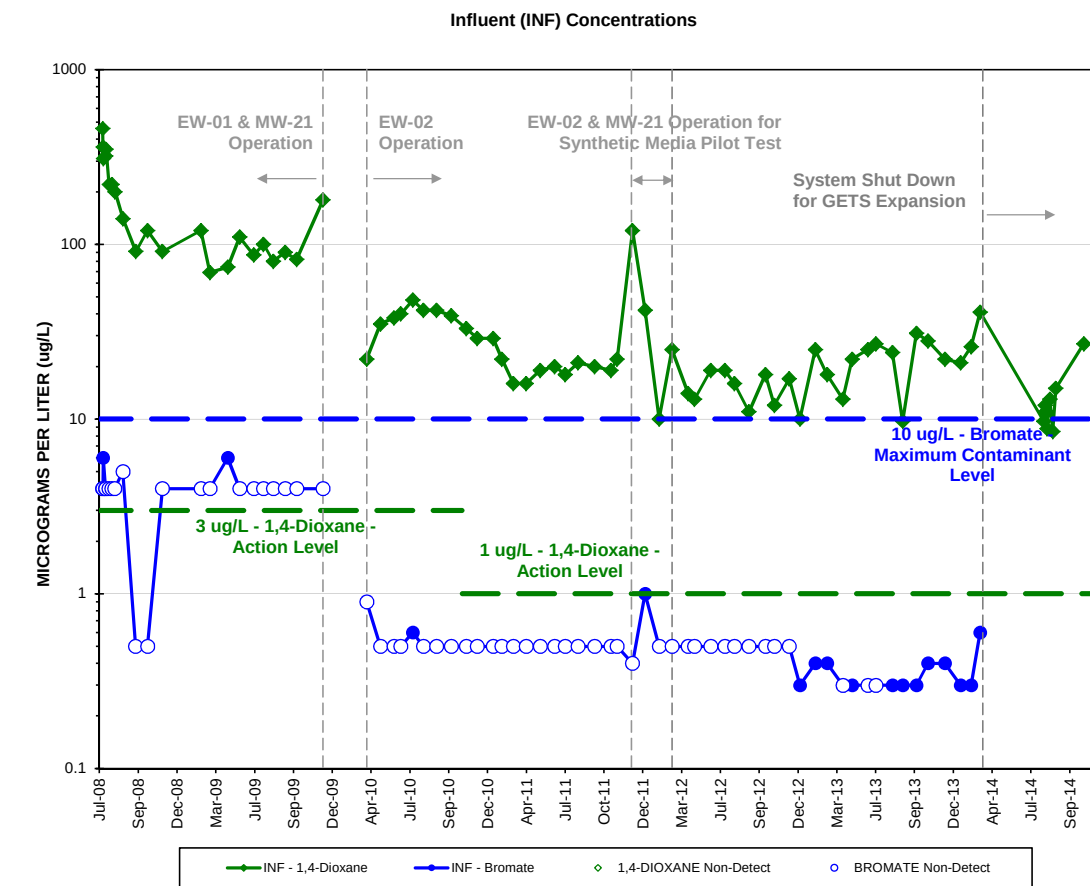


FIGURE 6.
1,4-DIOXANE AND BROMATE IN INFLUENT AND POST-OXIDATION SAMPLES

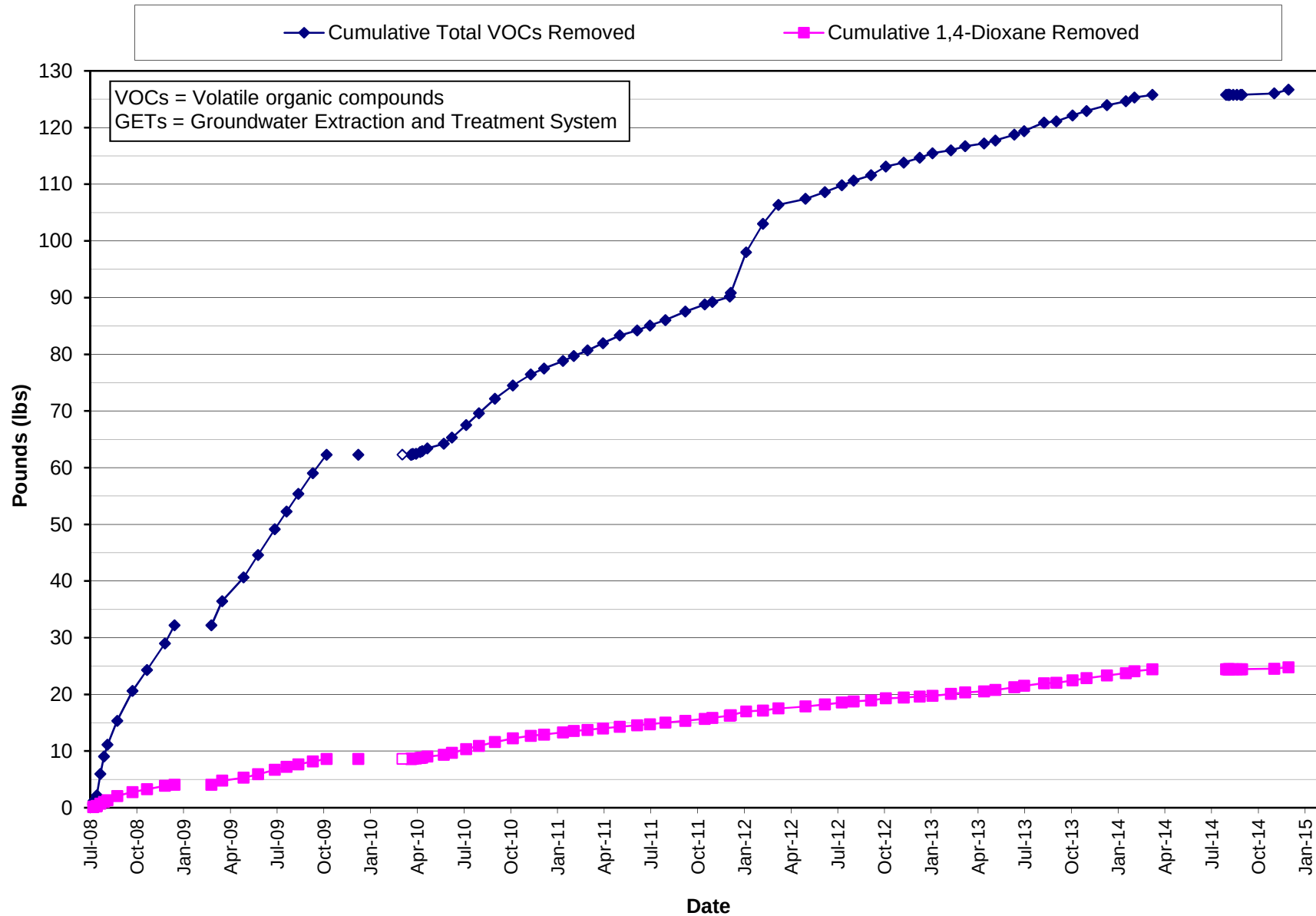


FIGURE 7.
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM MASS REMOVAL

APPENDIX A

GROUNDWATER SAMPLING FIELD FORMS

GROUNDWATER SAMPLING INFORMATION

DATE: 11/04/2014

TASK: 532.30

WELL ID: EW-01

Time <u>1234</u> Static DTW (ft below reference point)	<u>16.72</u>	Casing Volume (CV) (gallons) <u>17.3</u> 3 CV (gallons) <u>52</u>	<u>Weather Conditions</u>	<u>Initials:</u>
Casing Total Depth (ft below reference point)	<u>188</u>	Purging Device _____ Sampling Device _____	Time _____ Temp. _____	Begin Purge _____ End Purge <u>1420</u>
Water Column (feet)	<u>26.28</u>	Pump: Depth (ft brp) _____ Type _____ Voltage _____ HP _____	Skies _____	Gallons Purged _____ CVs Purged _____
Casing Capacity (Diameter <u>4</u> ") (gallons per foot)	<u>0.100</u>	Monitor Well Recharge Rate: Slow _____ Fast _____	Wind (mph) _____ From _____	DTW (ft brp) _____ Time <u>1420</u>

[illegible]

SAMPLE COLLECTION		SAMPLE TIME
ANALYSIS	QUANTITY	TYPE
8260B VOCs		40 ml VOA
8270 SIM 1,4 dioxane		1 L Amber
8270 MOD 1,4 dioxane		1 L Amber
DUPLICATES / SPLITS / BLANKS?		Y N
If yes, complete appropriate forms.		

AIR MONITORING PID/FID ppm:	VAULT NA	BKGD NA	BREATHING ZONE NA	DISCHARGE WATER NA
NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)				
Duplicate time: EW-100 16:10				

GROUNDWATER SAMPLING INFORMATION

DATE: 11/11/14

TASK: 532.38

WELL ID: MW-08

Time _____ Static DTW (ft below reference point)	150.22	Casing Volume (CV) (gallons) 2.3	3 CV (gallons) 7	Weather Conditions		Initials: TJB
Casing Total Depth (ft below reference point)	163.79	Purging Device redi flo	Sampling Device ded pump	Time 10:56	Temp 70	Begin Purge 11:07 End Purge 11:30
Water Column (feet)	13.57	Pump: Depth (ft brp) 160	Type Grundfos	Skies OC		Gallons Purged 8 CVs Purged 3.1
Casing Capacity (Diameter 2") (gallons per foot)	0.17	Monitor Well Recharge Rate: Slow	Fast X	Wind (mph) 0-5	From S	DTW (ft brp) 152.98 Time 11:40

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS....						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
11:07	150.22			begin	purge					291	0.5 gpm
11:09	NM	1		21.51	7.94	1.088	56.2	3.37	47.3	291	
11:11	NM	2		21.95	7.84	1.887	45.7	2.83	28.7	291	
11:14	NM	3		22.39	7.81	1.871	44.2	2.72	9.71	291	
11:18	NM	4		22.79	7.79	1.861	44.0	2.60	6.64	291	0.25 gpm
11:22	NM	5		24.90	7.79	1.914	39.6	2.31	8.80	293	0.25 gpm
11:25	NM	6		25.57	7.80	1.916	39.7	2.24	4.32	293	0.5 gpm
11:27	NM	7		25.33	7.80	1.926	38.8	2.04	2.58	293	
11:30	152.98	8		end	purge						

SAMPLE COLLECTION SAMPLE TIME 11:30			AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA			
ANALYSIS	QUANTITY	TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
8260B VOCs	3	40 ml VOA				
8270 SIM 1,4 dioxane		1 L Amber				
8270 MOD 1,4 dioxane		1 L Amber				
DUPLICATES / SPLITS / BLANKS? Y (N)						
If yes, complete appropriate forms.						

GROUNDWATER SAMPLING INFORMATION
DATE: 11/04/2014
TASK: 532.30
WELL ID: MW-01

Time <u>1223</u> Static DTW (ft below reference point)	<u>150.91</u>	Casing Volume (CV) (gallons) <u>535</u> 3 CV (gallons) <u>160.6</u>	Weather Conditions Time _____ Temp. _____ Skies _____ Wind (mph) _____ From _____	Initials: Begin Purge <u>1339</u> End Purge <u>1420</u> Gallons Purged _____ CVs Purged _____ DTW (ft brp) _____ Time <u>1420</u>
Casing Total Depth (ft below reference point) <u>232.188</u>		Purging Device <u>des pump</u> Sampling Device <u>des 56012</u>		
Water Column (feet)	<u>81.09</u>	Pump: Depth (ft brp) _____ Type _____ Voltage _____ HP _____		
Casing Capacity (Diameter <u>4</u> ") (gallons per foot)	<u>0.60</u>	Monitor Well Recharge Rate: Slow _____ Fast _____		

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS....						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1339	150.91	0	0	—	—	Pump	on	—	—		TOT: 558746
1344	163.79	110		22.2	7.55	199	217.3	2.22	4.40		TARGET TOT: 558907
1350	164.31	242		22.3	7.42	200	181.5	1.45	6.69		

SAMPLE COLLECTION SAMPLE TIME <u>1355</u> ANALYSIS QUANTITY TYPE			AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)		
8260B VOCs	<u>9</u>	40 ml VOA	MS/MSD		
8270 SIM 1,4 dioxane		1 L Amber			
8270 MOD 1,4 dioxane	<u>3</u>	1 L Amber			
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>(N)</u> If yes, complete appropriate forms.					

GROUNDWATER SAMPLING INFORMATION

DATE: 11/11/14

TASK: 532-30

WELL ID: MW-26C

Time 8:28	Static DTW (ft below reference point) 157.34	Casing Volume (CV) (gallons) 58.05	3 CV (gallons) 174.15	Weather Conditions		Initials: TJE / DM
Casing Total Depth (ft below reference point) 499	Purging Device del pump	Sampling Device p. post	Time 8:32	Temp. 70	Begin Purge 8:48	End Purge 10:06
Water Column (feet) 341.56	Pump: Depth (ft brp) 341.56	Type 2 1/2 HP	Skies OC	Gallons Purged 145	CVs Purged 3.4	
Casing Capacity (Diameter 2") (gallons per foot) 0.17	Monitor Well Recharge Rate: Slow	Fast X	Wind (mph) 0	From	DTW (ft brp) 157.34	Time 10:08

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS....						Pump Frequency Hz	COMMENTS
				Temp. (°)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
8:48	157.34	0	0							351	
8:51	158.21	7.5	1	22.09	9.20	0.572	-148.6	0.80	NM	351	~ 2.5 gpm
9:04	158.25	40	1.6	22.39	7.99	1.087	-51.3	1.86	NM	351	
9:16	158.25	70	1.2	22.41	7.86	1.097	-39.3	2.01	0.37	351	
9:32	158.25	110	1.9	22.47	7.80	1.100	-36.6	2.05	0.26	351	
9:41	158.25	132.5	2.3	22.45	7.78	1.100	-36.3	2.11	0.70	351	
9:52	158.25	160	2.8	22.45	7.76	1.100	-35.3	2.14	0.26	351	
10:02	158.25	185	3.2	22.47	7.75	1.100	-34.6	2.19	0.27	351	
10:06	158.25	195	3.4								

SAMPLE COLLECTION SAMPLE TIME 10:05		
ANALYSIS	QUANTITY	TYPE
8260B VOCs	3	40 ml VOA X
8270 SIM 1,4 dioxane		1 L Amber X
8270 MOD 1,4 dioxane		1 L Amber
DUPLICATES / SPLITS / BLANKS? Y N		
If yes, complete appropriate forms.		

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

GROUNDWATER SAMPLING INFORMATION

DATE: 11/5/14

TASK: 532-30

WELL ID: MW-28

Time 1501 Static DTW (ft below reference point)	163.00	Casing Volume (CV) (gallons) 27	3 CV (gallons) 81	Weather Conditions		Initials: TJE / SCS
Casing Total Depth (ft below reference point)	375	Purging Device	ded pump	Sampling Device	ded pump	Begin Purge 1505 End Purge 1521
Screen Water Column (feet)	45	Pump: Depth (ft brp)	330	Type	Grundfos	Gallons Purged 91.7 CVs Purged
Casing Capacity (Diameter 4" (gallons per foot)	0.6	Monitor Well Recharge Rate: Slow	Fast	X	Wind (mph) 5-10 From W	DTW (ft brp) 165.53 Time 1524

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
5:05 15:05	163.30	0	0	1	begin	purge				4	
5:07 14:07	168.40	9.7		21.88	7.41	1.030	-456	3.44	0.50		~ 5 gpm
5:09 14:09	168.51	20.2		21.88	7.32	1.180	-706	5.24	0.96		
5:11 14:11	168.60	31.4		21.94	7.29	1.224	-43.4	6.19	1.94		
15:13	168.60	42.2		21.94	7.30	1.232	-30.5	6.17	0.61		
15:15	168.57	59.0		21.94	7.33	1.239	-18.9	6.13	0.68		
15:20	168.60	81.0		21.95	7.34	1.244	-8.4	6.51	0.70		
15:21	165.53	91.7		end	purge						

SAMPLE COLLECTION SAMPLE TIME 15:30			AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA			
ANALYSIS	QUANTITY	TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
8260B VOCs	13	40 ml VOA				
8270 SIM 1,4 dioxane	1	1 L Amber				
8270 MOD 1,4 dioxane		1 L Amber				
DUPLICATES / SPLITS / BLANKS? Y <u>(N)</u> If yes, complete appropriate forms.						

GROUNDWATER SAMPLING INFORMATION

DATE: 11/5/14

TASK: 532-30

WELL ID: MW-30A

Time <u>14:22</u> Static DTW (ft below reference point) <u>154.41</u>	Casing Volume (CV) (gallons) <u>17.6</u> 3 CV (gallons) <u>52.8</u>	Weather Conditions	Initials: <u>TJE / SCS</u>
Casing Total Depth (ft below reference point) <u>564</u>	Purging Device <u>Red pump</u> Sampling Device <u>0.40 pipe still</u>	Time <u>14:25</u> Temp. <u>80</u>	Begin Purge <u>14:26</u> End Purge <u>14:39</u>
Water Column (feet) <u>Screen</u>	Pump: Depth (ft brp) <u>520</u> Type _____ Voltage _____ HP _____	Skies <u>Clear</u>	Gallons Purged <u>622</u> CVs Purged _____
Casing Capacity (Diameter <u>3</u> ") (gallons per foot) <u>0.4</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>0-5</u> From <u>W</u>	DTW (ft brp) <u>152.0</u> Time <u>14:39</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
14:26	153.75	0	0								begin pump
14:28	153.75	8.8		21.55	7.52	0.710	29.5	0.64	1.82		
14:30	153.77	18.7		21.49	7.61	0.743	-68.2	1.30	0.60		5 gpm
14:32	153.91	28.7		21.64	7.53	0.742	-49.1	1.62	0.50		
14:34	154.00	38.6		21.74	7.50	0.741	-33.0	1.52	0.56		5 gpm
14:36	154.10	48.6		21.76	7.51	0.739	-21.4	1.53	0.17		
14:37	154.11	52.0		21.75	7.50	0.738	-18.7	1.53	0.20		
14:39	154.10	62.2									end purge
	154.15										

SAMPLE COLLECTION SAMPLE TIME <u>14:40</u>		AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA	
ANALYSIS	QUANTITY	TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)
8260B VOCs	<u>3</u>	40 ml VOA <u>X</u>	
8270 SIM 1,4 dioxane	<u>1</u>	1 L Amber <u>X</u>	
8270 MOD 1,4 dioxane		1 L Amber	
DUPLICATES / SPLITS / BLANKS? <u>Y</u>			
If yes, complete appropriate forms.			

GROUNDWATER SAMPLING INFORMATION

DATE: 11/5/14

TASK: 532-30

WELL ID: MW-30B

Time <u>1343</u> Static DTW (ft below reference point)	<u>147.72</u>	Casing Volume (CV) (gallons) <u>40</u> 3 CV (gallons) <u>120</u>	Weather Conditions
Casing Total Depth (ft below reference point)	<u>619</u>	Purging Device <u>Red pump</u> Sampling Device <u>3.00 Red pipe stone</u>	Time <u>13:45</u> Temp. <u>85</u>
Water Column (feet)	<u>99</u>	Pump: Depth (ft brp) <u>52</u> Type <u>Groutless</u> Voltage <u>240</u> HP	Skies <u>clear</u>
Casing Capacity (Diameter <u>3"</u>) (gallons per foot)	<u>0.4</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>	Wind (mph) <u>0</u> From
			Initials:
			Begin Purge <u>13:47</u> End Purge <u>14:20</u>
			Gallons Purged <u>130</u> CVs Purged
			DTW (ft brp) <u>166.95</u> Time <u>14:20</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
Temp. (°C)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)						
13:47	147.72	0	0	begin purge							
13:48	161.27	3.5		22.60	7.34	1.135	88.2	1.60	5.44		Q ≈ 5 gpm
13:53	163.91	25.5		21.60	7.48	1.536	63.6	3.55	4.02		
13:58	165.57	52.4		21.77	7.17	1.437	10.7	4.30	3.11		Q ≈ 4.5 gpm
14:05	166.42	75.5		21.83	7.31	1.026	-15.9	2.39	14.0		
14:10	166.91	95.0		21.87	7.31	1.038	-12.5	2.30	7.64		Q ≈ 4.0 gpm
14:16	166.95	120.0		21.91	7.32	1.050	-9.7	2.33	4.43		
14:20	166.95	130.3		end purge							
	162.90										

SAMPLE COLLECTION SAMPLE TIME <u>14:20</u>			AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA			
ANALYSIS	QUANTITY	TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
8260B VOCs	<u>3</u>	40 ml VOA <u>X</u>				
8270 SIM 1,4 dioxane	<u>1</u>	1 L Amber <u>X</u>				
8270 MOD 1,4 dioxane		1 L Amber				
DUPLICATES / SPLITS / BLANKS? Y <u>(N)</u>						
If yes, complete appropriate forms.						

GROUNDWATER SAMPLING INFORMATION

DATE: 11-6-14

TASK: 532.30

WELL ID: MW-31

Time <u>1530</u> Static DTW (ft below reference point)	Casing Volume (CV) (gallons) <u>81</u> 3 CV (gallons) <u>243</u>	Weather Conditions	Initials: <u>COB-EJH</u>
Casing Total Depth (ft below reference point) <u>096</u>	Purging Device _____ Sampling Device _____	Time <u>1537</u> Temp. <u>75</u>	Begin Purge <u>1533</u> End Purge <u>1602</u>
Water Column (feet) <u>54</u>	Pump: Depth (ft brp) <u>942</u> Type _____ Voltage _____ HP _____	Skies <u>Sunny</u>	Gallons Purged <u>266</u> CVs Purged <u>33</u>
Casing Capacity (Diameter <u>6"</u>) (gallons per foot) <u>15</u> <u>0.60</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>0</u> From <u>0</u>	DTW (ft brp) _____ Time _____

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (C)	pH	EC (mS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1533		0	0	—		Pump off					Q = 9.5 gpm
1538	141.36	50	0.62	25.23	7.78	.007	-51.1	8.10	104.8		
1542	141.41	90	1.11	24.44	7.96	.019	-59.2	6.29	109.4		
1546	141.41	120	1.48	23.69	7.84	.014	-54.2	6.48	40.7		
1550	~~143.48~~ 141.43	155	1.91	23.17	7.76	.011	-51.2	6.88	31.4		
1554	141.43	200	2.47	22.46	7.75	.011	-47.8	7.00	15.5		
1558	141.43	250	3.00	22.16	7.72	.014	-45.9	6.99	7.9		
1602	NM	266	3.3	—		Pump off					

SAMPLE COLLECTION SAMPLE TIME <u>1558</u>		
ANALYSIS	QUANTITY	TYPE
8260B VOCs	<u>3</u>	40 ml VOA
8270 SIM 1,4 dioxane		1 L Amber
8270 MOD 1,4 dioxane	<u>1</u>	1 L Amber
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>(N)</u>		
If yes, complete appropriate forms.		

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA
 NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

GROUNDWATER SAMPLING INFORMATION

DATE: 11/5/2014

TASK: 532.30

WELL ID: MW-32B

Time <u>0850</u> Static DTW (ft below reference point)	<u>116.35</u>	Screen <u>SV</u> Casing Volume (gallons) <u>203.5</u> <u>SV</u> 3 CV (gallons) <u>790.5</u>	Weather Conditions	Initials: <u>EJH/CCB</u>
Casing Total Depth (ft below reference point)	<u>999</u>	Purging Device <u>Dedicated pump</u> Sampling Device <u>0-10" pipe stand</u>	Time <u>0851</u> Temp. <u>70</u>	Begin Purge <u>0900</u> End Purge <u>1031</u>
Water Column (feet)	<u>439</u>	Pump: Depth (ft bpr) <u>500</u> Type _____ Voltage <u>100</u> HP _____	Skies <u>Sunny</u>	Gallons Purged <u>816</u> CVs Purged <u>3</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot)	<u>0.60</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>0</u> From <u>0</u>	DTW (ft bpr) <u>122.02</u> Time <u>1033</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS....						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (mS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
0900	116.35	0	0			Pump ON					
0907	128.03	68	0.26	20.9	7.70	1.06	-206.0	1.20	3.91		Q = 9 gpm
0921	~~128.50~~ 128.50	192.01	0.73	21.1	7.77	1.05	-204.5	0.47	0.89		
0935	128.72	332.1	1.26	21.4	7.82	1.01	-167.5	0.44	0.92		
0949	128.84	447.7	1.69	21.4	7.82	1.02	-169.3	0.05	0.39		
1003	129.00	576	2.19	21.4	7.82	1.02	-171.8	0.04	7.00		
1017	129.02	704	2.67	21.4	7.82	1.02	-170.1	0.04	0.11		
1029	129.02	790	2.99	21.5	7.83	1.03	-159.1	0.04	1.91		
1031	NM	816				Pump OFF					↓

SAMPLE COLLECTION SAMPLE TIME <u>1030</u>			AIR MONITORING PID/FID ppm: <u>VAULT NA</u> <u>BKGD NA</u> <u>BREATHING ZONE NA</u> <u>DISCHARGE WATER NA</u>			
ANALYSIS	QUANTITY	TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
8260B VOCs	<u>3</u>	40 ml VOA				
8270 SIM 1,4 dioxane	<u>1</u>	1 L Amber				
8270.MOD.1,4 dioxane		1 L Amber				
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>(N)</u> If yes, complete appropriate forms.						

GROUNDWATER SAMPLING INFORMATION

DATE: 11-5-14

TASK: 532.30

WELL ID: MW33

Time <u>1447</u> Static DTW (ft below reference point)	<u>111.0</u>	Screen Casing Volume (CV) (gallons) <u>291</u> 3" V (gallons) <u>873</u>	Weather Conditions	Initials: <u>COB + EJA</u>
Casing Total Depth (ft below reference point)	<u>1020</u>	Purging Device <u>Dee Pump</u> Sampling Device <u>No Dees Pipe Stand</u>	Time <u>1500</u> Temp. <u>82°</u>	Begin Purge <u>1451</u> End Purge <u>1622</u>
Water Column (feet)	<u>485</u>	Pump: Depth (ft brp) <u>535</u> Type <u>Grundfos</u> Voltage <u>240</u> HP	Skies <u>Clear</u>	Gallons Purged <u>881</u> CVs Purged <u>30</u>
Casing Capacity (Diameter 4") (gallons per foot)	<u>0.6</u>	Monitor Well Recharge Rate: Slow _____ Fast _____	Wind (mph) <u>0</u> From <u>0</u>	DTW (ft brp) <u>110.09</u> Time <u>1622</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS....						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (MS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
<u>1451</u>	<u>111.0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>Begin Pumping</u>						<u>Q = 10 gpm</u>
<u>1506</u>	<u>112.15</u>	<u>150</u>	<u>0.5</u>	<u>20.7</u>	<u>7.80</u>	<u>0.67</u>	<u>-41.0</u>	<u>1.51</u>	<u>0.76</u>		
<u>1521</u>	<u>112.30</u>	<u>295</u>	<u>1.0</u>	<u>20.9</u>	<u>7.86</u>	<u>0.69</u>	<u>-91.6</u>	<u>0.39</u>	<u>5.07</u>		
<u>1536</u>	<u>112.20</u>	<u>452</u>	<u>1.55</u>	<u>21.0</u>	<u>7.76</u>	<u>0.68</u>	<u>-111.0</u>	<u>0.67</u>	<u>3.75</u>		
<u>1551</u>	<u>111.72</u>	<u>587</u>	<u>2.0</u>	<u>21.0</u>	<u>7.76</u>	<u>0.68</u>	<u>-106.1</u>	<u>0.46</u>	<u>2.02</u>		
<u>1606</u>	<u>111.41</u>	<u>735</u>	<u>2.5</u>	<u>21.0</u>	<u>7.76</u>	<u>0.68</u>	<u>-122.3</u>	<u>0.47</u>	<u>0.60</u>		
<u>1621</u>	<u>111.21</u>	<u>873</u>	<u>3</u>	<u>21.0</u>	<u>7.76</u>	<u>0.68</u>	<u>-124.4</u>	<u>0.87</u>	<u>0.15</u>		
<u>1622</u>	<u>110.09</u>	<u>881</u>	<u>1</u>		<u>Pump Off</u>						

SAMPLE COLLECTION SAMPLE TIME		
ANALYSIS	QUANTITY	TYPE
8260B VOCs	<u>3</u>	40 ml VOA
8270 SIM 1,4 dioxane	<u>1</u>	1 L Amber
8270 MOD 1,4 dioxane		1 L Amber
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>(N)</u>		

If yes, complete appropriate forms.

AIR MONITORING PID/FID ppm: VAULT NA	BKGD NA	BREATHING ZONE NA	DISCHARGE WATER NA
NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			

GROUNDWATER SAMPLING INFORMATION

DATE: 11/5/14

TASK: 532-30

WELL ID: MW-34B

Time 13:00	Static DTW (ft below reference point) 175.60	Casing Volume (CV) (gallons) 46	3 CV (gallons) 138	Weather Conditions		Initials: TJE/SCS
Casing Total Depth (ft below reference point) 536	Purging Device Dead pump	Sampling Device Dead samp	Time 13:00	Temp. 80	Begin Purge 13:04	End Purge 13:25
Water Column (feet) 76	Pump: Depth (ft brp) 460	Type Grundfos	Voltage	HP	Gallons Purged 1956	CVs Purged
Casing Capacity (Diameter 4" (gallons per foot) 0.60	Monitor Well Recharge Rate: Slow	Fast	Wind (mph) 0-5	From N	DTW (ft brp) 180.41	Time 13:25

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
13:04	175.60	0	0								Reg m purge
13:06	180.20	14.0		21.39	7.41	0.972	-115.7	2.83	18.1	-	Q ≈ 10 gpm
13:08	180.21	31.6		21.74	7.07	0.955	-101.7	3.40	103.7		
13:10	180.30	52.5		21.90	7.12	0.958	-76.5	4.32	166.0		
13:12	180.32	72.5		21.98	6.97	0.956	-41.7	3.95	33.3		
13:14	180.42	94.5		21.99	6.98	0.956	-43.9	3.95	16.1		Q ≈ 11 gpm
13:16	180.44	117.5		21.99	6.98	0.956	-37.1	4.03	8.84		
13:18	180.41	138		21.99	6.97	0.956	-31.8	4.00	10.75		
13:25	180.41	195.6									end purge

SAMPLE COLLECTION SAMPLE TIME 13:20	
ANALYSIS	QUANTITY TYPE
8260B VOCs	40 ml VOA 9
8270 SIM 1,4 dioxane	1 L Amber
8270 MOD 1,4 dioxane	1 L Amber 3
DUPLICATES / SPLITS / BLANKS?	(Y) N
If yes, complete appropriate forms.	

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

Split and Dup
MW-3400B - 13:30

GROUNDWATER SAMPLING INFORMATION

DATE: 11/06/2014

TASK: 53230

WELL ID: MW-35C
MW-35Be

Time 1314 Static DTW (ft below reference point) 11388	Casing Volume (CV) (gallons) 378 3 CV (gallons) 1,134	Weather Conditions	Initials: CCB + EJA
Casing Total Depth (ft below reference point) 1040	Purging Device ded pump Sampling Device ND Pre-Inst	Time _____ Temp. _____	Begin Purge _____ End Purge _____
Water Column (feet) 630	Pump: Depth (ft brp) 410 Type _____ Voltage _____ HP _____	Skies _____	Gallons Purged _____ CVs Purged _____
Casing Capacity (Diameter 4") (gallons per foot) 0.60	Monitor Well Recharge Rate: Slow _____ Fast _____	Wind (mph) _____ From _____	DTW (ft brp) _____ Time _____

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1318	11388	0	0	—	—	Pump on	—	—	—	—	Q = 14 gpm
1332	116.53	218.8	0.58	20.6	7.29	0.95	60.5	1.89	4.72	—	
1346	116.52	433	1.15	20.7	7.46	0.78	-11.8	2.32	6.98	—	
1400	116.52	619	1.64	20.75	7.29	0.794	27.5	3.64	8.24	—	
1414	116.52	804	2.13	20.75	7.28	0.787	6.5	3.43	50.1	—	
1428	—	—	—	Pump off	—	—	—	—	—	—	
1432	NM	920	—	—	Pump on	—	—	—	—	—	
1435	115.22	950	2.51	20.65	7.23	0.794	-20.9	2.76	19.1	—	
1442	116.52	1044	2.76	20.66	6.81	0.781	1.6	3.97	13.2	—	
1450	116.52	1153	3.05	20.67	6.86	0.775	-1.2	4.00	4.32	—	
1455	116.52	1230	3.25	20.68	6.86	0.776	-1.4	3.99	4.32	—	

SAMPLE COLLECTION SAMPLE TIME 1500
ANALYSIS QUANTITY TYPE

8260B VOCs 3 40 ml VOA
8270 SIM 1,4 dioxane 1 1 L Amber
8270 MOD 1,4 dioxane 1 1 L Amber

DUPLICATES / SPLITS / BLANKS? Y
If yes, complete appropriate forms.

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

GROUNDWATER SAMPLING INFORMATION

DATE: 11-5-14

TASK: 532.30

WELL ID: MW36

Time 1210 Static DTW (ft below reference point) 114.22	Screen Casing Volume (CV) (gallons) 320.4 3 CV (gallons) 961	Weather Conditions	Initials: CCB ESH
Casing Total Depth (ft below reference point) 994	Purging Device Dedicated Pump Sampling Device 10-100	Time 1210 Temp. 80	Begin Purge 1210 End Purge 1351
Screen to pump Water Column (feet) 534	Pump: Depth (ft brp) 460 Type Grunfos Voltage 240 HP	Skies Clear	Gallons Purged 992 CVs Purged 3.0
Casing Capacity (Diameter 4") (gallons per foot) 0.6	Monitor Well Recharge Rate: Slow Fast ☒	Wind (mph) 2 mph From W	DTW (ft brp) 1550 Time 1354

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (MS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1215	114.22	0	0	-	Begin Pumping						
1230	116.46	150	0.5	21.2	7.84	0.82	-149.9	0.12	0.07		Q=10.5 gpm
1245	116.87	242.8	0.9	21.7	7.93	0.66	-158.0	0.05	6.52		
1300	115.07	460	1.4	21.9	7.94	0.67	-155.9	0.03	2.96		
1315	115.30	625	2.0	21.9	7.95	0.67	-136.6	0.26	1.57		
1330	115.42	778	2.4	21.9	7.94	0.67	-141.7	0.04	0.08		
1348	115.58	961	3.0	21.9	7.92	0.67	-138.2	0.35	1.12		
1351	NM	992					Pump Off				

SAMPLE COLLECTION SAMPLE TIME 1350			AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA			
ANALYSIS	QUANTITY	TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
8260B VOCs	3	40 ml VOA				
8270 SIM 1,4 dioxane		1 L Amber				
8270 MOD 1,4 dioxane	1	1 L Amber				
DUPLICATES / SPLITS / BLANKS? Y ☐ N ☒						

GROUNDWATER SAMPLING INFORMATION

DATE: 11-6-14

TASK: 532.30

WELL ID: MW37

Time <u>1050</u> Static DTW (ft below reference point) <u>170.97</u>	Screen Casing Volume (CV) (gallons) <u>1150</u> 3 CV (gallons) <u>540</u>	Weather Conditions	Initials:
Casing Total Depth (ft below reference point) <u>820</u>	Purging Device <u>Dee Pump</u> Sampling Device <u>NO Des Disp Stand</u>	Time <u>1050</u> Temp. <u>85°</u>	Begin Purge <u>110</u> End Purge <u>1184</u>
Water Column (feet) <u>300</u>	Pump: Depth (ft brp) <u>520</u> Type <u>Grundfos</u> Voltage <u>240</u> HP	Skies <u>Clear</u>	Gallons Purged <u>37</u> CVs Purged <u>3</u>
Screen Casing Capacity (Diameter <u>4</u> ") (gallons per foot) <u>0.60</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>0</u> From <u>0</u>	DTW (ft brp) <u>171.06</u> Time <u>1155</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (MS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
~~1105~~	170.97	0	0	Pump On							Q=13 gpm
1117	174.00	110	0.61	22.7	7.92	0.443	-248.0	0.04	21.6		
1124	174.16	200	1.11	23.0	7.97	0.420	-230.9	0.04	4.65		
1131	174.15	300	1.7	23.1	7.96	0.434	-206.1	0.15	48		
1138	174.16	386	2.1	23.1	7.96	0.437	-199.8	0.07	30.9		
1145	174.16	475	2.6	23.1	7.95	0.440	-193.0	0.07	18.7		
1152	174.16	540	3	23.1	7.95	0.443	-189.2	0.08	18.7		
1154	NM	557		Pump off							

SAMPLE COLLECTION SAMPLE TIME <u>1155</u>			AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA			
ANALYSIS	QUANTITY	TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
8260B VOCs	<u>3</u>	40 ml VOA				
8270 SIM 1,4 dioxane	<u>1</u>	1 L Amber				
8270 MOD 1,4 dioxane		1 L Amber				
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>N</u> If yes, complete appropriate forms.						

GROUNDWATER SAMPLING INFORMATION

DATE: 11/5/14

TASK: 532.30

WELL ID: MW-38

Time: 10:17	Static DTW (ft below reference point) 176.65	Casing Volume (CV) (gallons) 23.35	3 CV (gallons) 70	Weather Conditions		Initials: TJE
Casing Total Depth (ft below reference point) 200	Purging Device Ded pump	Sampling Device NP Ded	Time 10:20	Temp. 80	Begin Purge 10:25	End Purge
Water Column (feet) 23.35	Pump: Depth (ft brp) 190	Type	Volage	HP	Skies clear	Gallons Purged 83
Casing Capacity (Diameter 4") (gallons per foot) 0.66	Monitor Well Recharge Rate: Slow	Fast	IX	Wind (mph) 0	From	DTW (ft brp) 176.66
						Time 10:53

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
10:23	176.65	0	0	begin	pumping						
10:25	176.82	2.7		22.92	7.24	1.424	-96.0	2.64	10.85		Q = 2 gpm
10:31	176.85	18.4		22.23	7.30	1.201	-37.7	0.68	9.24		
10:37	176.90	36.0		22.27	7.30	1.195	-12.3	0.57	7.83		
10:43	176.90	54.2		22.29	7.29	1.186	-19.4	0.49	3.62		
10:49	176.90	73.3		22.30	7.30	1.186	-19.6	0.45	1.49		
10:53	176.66	83.0		end	pumping						

SAMPLE COLLECTION SAMPLE TIME 10:52

ANALYSIS QUANTITY TYPE

8260B VOCs 3 40 ml VOA K
 8270 SIM 1,4 dioxane 1 1 L Amber X
 8270 MOD 1,4 dioxane 1 1 L Amber

DUPLICATES / SPLITS / BLANKS?

Y

N

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

GROUNDWATER SAMPLING INFORMATION

DATE: 11-6-14

TASK: 53230

WELL ID: MW39

Time <u>0830</u> Static DTW (ft below reference point) <u>108.52</u>	Screen <u>SV</u> Casing Volume (CV) (gallons) <u>271</u> 3 CV (gallons) <u>814</u>	Weather Conditions	Initials: <u>OCB + EAH</u>
Casing Total Depth (ft below reference point) <u>108.52</u>	Purging Device <u>Dev Pump</u> Sampling Device <u>Dev. Pipe Stand</u>	Time <u>0830</u> Temp. <u>70</u>	Begin Purge <u>0940</u> End Purge <u>0943</u>
Water Column (feet) <u>08.52</u>	Pump: Depth (ft brp) <u>560</u> Type _____ Voltage <u>240</u> HP _____	Skies <u>Clear</u>	Gallons Purged <u>864</u> CVs Purged <u>3.0</u>
Screen Casing Capacity (Diameter <u>4</u> ") (gallons per foot) <u>0.6</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>0</u> From <u>0</u>	DTW (ft brp) <u>108.5</u> Time <u>946</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (MS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
0840	108.52	0	0	—	Pump On	—	—	—	—	—	Q = 13.5'
0850	117.60	145	0.5	21.7	9.77	0.484	-252.1	0.33	0.47		
0900	117.87	277	1.0	22.3	9.35	0.415	-235.1	0.10	2.45		
0910	117.92	415	1.5	22.5	9.15	0.428	-21.5	0.08	1.38		
0920	117.99	554	2.0	22.6	8.98	0.428	-203.4	0.08	0.31		
0930	118.00	693	2.5	22.6	8.92	0.429	-200.1	0.11	0.83		
0940	118.01	815	3.0	22.6	8.93	0.429	-196.1	0.10	0.47		
0943	NM	864	—	—	—	Pump off	—	—	—		

SAMPLE COLLECTION	SAMPLE TIME	0940
ANALYSIS	QUANTITY	TYPE
8260B VOCs	9	40 ml VOA
8270 SIM 1,4 dioxane	3	1 L Amber
8270 MOD 1,4 dioxane		1 L Amber
DUPLICATES / SPLITS / BLANKS?	Y	(N)
If yes, complete appropriate forms.		

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)

MS/MSD

GROUNDWATER SAMPLING INFORMATION

DATE: 11/6/14

TASK: 532.30

WELL ID: MW-40

Time <u>10:29</u> Static DTW (ft below reference point) <u>141.12</u>	Casing Volume (CV) (gallons) <u>75</u> 3 CV (gallons) <u>225</u>	Weather Conditions	Initials: <u>TJE/SCS</u>
Casing Total Depth (ft below reference point) <u>970</u>	Purging Device <u>ded pump</u> Sampling Device <u>Ni Pipe Stand</u>	Time <u>11:00</u> Temp. <u>80</u>	Begin Purge <u>1030</u> End Purge <u>1103</u>
Water Column (feet) <u>50</u>	Pump: Depth (ft brp) <u>920</u> Type <u>ground</u> Voltage <u>240</u> HP	Skies <u>clear</u>	Gallons Purged <u>248.4</u> CVs Purged
Casing Capacity (Diameter <u>6"</u>) (gallons per foot) <u>1.5</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>	Wind (mph) <u>0-5</u> From <u>W</u>	DTW (ft brp) <u>141.21</u> Time <u>11:04</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS....						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
<u>10:30</u>	<u>141.12</u>	<u>0</u>	<u>0</u>	<u>begin</u>	<u>purge</u>						
<u>10:34</u>	<u>141.80</u>	<u>21.0</u>		<u>22.80</u>	<u>7.68</u>	<u>0.800</u>	<u>-14.4</u>	<u>0.90</u>	<u>0.72</u>		<u>~5 gpm</u>
<u>10:39</u>	<u>141.87</u>	<u>55.5</u>		<u>21.64</u>	<u>7.63</u>	<u>0.772</u>	<u>-170.2</u>	<u>0.16</u>	<u>1.09</u>		<u>~6 gpm</u>
<u>10:45</u>	<u>141.87</u>	<u>112.3</u>		<u>21.81</u>	<u>7.56</u>	<u>0.817</u>	<u>-172.2</u>	<u>0.30</u>	<u>1.41</u>		<u>~8 gpm</u>
<u>10:51</u>	<u>141.88</u>	<u>150.9</u>		<u>21.85</u>	<u>7.53</u>	<u>0.816</u>	<u>-174.2</u>	<u>0.38</u>	<u>0.33</u>		<u>~8 gpm</u>
<u>10:57</u>	<u>141.90</u>	<u>199.4</u>		<u>21.85</u>	<u>7.50</u>	<u>0.816</u>	<u>-174.3</u>	<u>0.39</u>	<u>0.59</u>		<u>~8 gpm</u>
<u>11:01</u>	<u>141.00</u>	<u>232.4</u>		<u>21.85</u>	<u>7.49</u>	<u>0.817</u>	<u>-174.6</u>	<u>0.40</u>	<u>0.74</u>		<u>~8 gpm</u>
<u>11:03</u>	<u>141.21</u>	<u>248.4</u>		<u>end</u>	<u>purge</u>						

SAMPLE COLLECTION SAMPLE TIME <u>1105</u>				AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA			
ANALYSIS	QUANTITY	TYPE		NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
8260B VOCs	<u>3</u>	40 ml VOA	<u>X</u>				
8270 SIM 1,4 dioxane	<u>1</u>	1 L Amber	<u>X</u>				
8270 MOD 1,4 dioxane		1 L Amber					
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>N</u> If yes, complete appropriate forms.							

GROUNDWATER SAMPLING INFORMATION

DATE: 11/5/14

TASK: 532.30

WELL ID: MW-41

Time 9:30 Static DTW (ft below reference point) 182.24	Casing Volume (CV) (gallons) 39 3 CV (gallons) 117	Weather Conditions	Initials: TE
Casing Total Depth (ft below reference point) 425	Purging Device ded. pump Sampling Device 210 ppm	Time 9:30 Temp. 80	Begin Purge 9:39 End Purge 10:04
Water Column (feet) 65	Pump: Depth (ft brp) 363 Type Ground Hrs Voltage 210 HP	Skies clear	Gallons Purged 161.4 CVs Purged
Casing Capacity (Diameter 4") (gallons per foot) 0.60	Monitor Well Recharge Rate: Slow Fast X	Wind (mph) 05 From W	DTW (ft brp) 191.20 Time 10:04

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS....						Pump Frequency Hz	COMMENTS
				Temp. (°)	pH	EC (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
9:39	182.24	0	0				begin				Q ≈ 4.5 gpm
9:41	190.01	20.0		22.02	7.02	1.916	78.8	1.80	2.93	-	
9:45	189.97	38.7		22.20	6.98	1.873	21.8	2.77	2.31		
9:49	191.07	70.2		22.25	6.98	1.876	47.8	2.88	54.4		
9:53	191.10	95.3		22.24	6.97	1.890	56.9	3.00	14.6		
9:57	191.12	123.0		22.25	6.97	1.882	60.8	2.96	11.44		
10:01	191.17	144.7		22.25	6.97	1.888	60.0	2.88	9.31		
10:04	191.20	161.4					end pumping				

SAMPLE COLLECTION SAMPLE TIME 10:04		
ANALYSIS	QUANTITY	TYPE
8260B VOCs	3	40 ml VOA X
8270 SIM 1,4 dioxane	1	1 L Amber X
8270 MOD 1,4 dioxane		1 L Amber
DUPLICATES / SPLITS / BLANKS? Y N		
If yes, complete appropriate forms.		

AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA

NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)



HARGIS + ASSOCIATES, INC.

APPENDIX B

LABORATORY ANALYTICAL REPORTS

GROUNDWATER SAMPLING ANALYTICAL RESULTS



September 17, 2014

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No.: T104704502

Re: ATL Work Order Number : 1402647
Client Reference : RAYTHEON, 532.30

Enclosed are the results for sample(s) received on September 10, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read "E Rodriguez", is placed over a light gray rectangular background.

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-091014A	1402647-01	Lab H2O	9/10/14 8:00	9/10/14 15:00
MW-41	1402647-02	Groundwater	9/10/14 14:15	9/10/14 15:00
MW-4100	1402647-03	Groundwater	9/10/14 14:30	9/10/14 15:00



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

Client Sample ID TB-091014A

Lab ID: 1402647-01

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,1,1-Trichloroethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,1,2-Trichloroethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,1-Dichloroethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,1-Dichloroethene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,1-Dichloropropene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,2,3-Trichloropropane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,2,3-Trichlorobenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,2,4-Trichlorobenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,2,4-Trimethylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,2-Dibromoethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,2-Dichlorobenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,2-Dichloroethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,2-Dichloropropane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,3,5-Trimethylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,3-Dichlorobenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,3-Dichloropropane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
1,4-Dichlorobenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
2,2-Dichloropropane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
2-Chlorotoluene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
4-Chlorotoluene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
4-Isopropyltoluene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Benzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Bromobenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Bromodichloromethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Bromoform	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Bromomethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Carbon tetrachloride	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Chlorobenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Chloroethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Chloroform	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Chloromethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
cis-1,2-Dichloroethene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
cis-1,3-Dichloropropene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Dibromochloromethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

Client Sample ID TB-091014A

Lab ID: 1402647-01

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Dichlorodifluoromethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Ethylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Hexachlorobutadiene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Isopropylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
m,p-Xylene	ND	1.0	1	B4I0235	09/12/2014	09/12/14 15:40	
Methylene chloride	ND	1.0	1	B4I0235	09/12/2014	09/12/14 15:40	
n-Butylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
n-Propylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Naphthalene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
o-Xylene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
sec-Butylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Styrene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
tert-Butylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Tetrachloroethene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Toluene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
trans-1,2-Dichloroethene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Trichloroethene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Trichlorofluoromethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Vinyl chloride	ND	0.50	1	B4I0235	09/12/2014	09/12/14 15:40	
Surrogate: 1,2-Dichloroethane-d4	93.2 %	64 - 146		B4I0235	09/12/2014	09/12/14 15:40	
Surrogate: 4-Bromofluorobenzene	101 %	60 - 128		B4I0235	09/12/2014	09/12/14 15:40	
Surrogate: Dibromofluoromethane	83.7 %	72 - 141		B4I0235	09/12/2014	09/12/14 15:40	
Surrogate: Toluene-d8	101 %	61 - 124		B4I0235	09/12/2014	09/12/14 15:40	



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Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

Client Sample ID MW-41

Lab ID: 1402647-02

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,1,1-Trichloroethane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,1,2-Trichloroethane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,1-Dichloroethane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,1-Dichloroethene	2.4	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,1-Dichloropropene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,2,3-Trichloropropane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,2,3-Trichlorobenzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,2,4-Trichlorobenzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,2,4-Trimethylbenzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,2-Dibromoethane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,2-Dichlorobenzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,2-Dichloroethane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,2-Dichloropropane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,3,5-Trimethylbenzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,3-Dichlorobenzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,3-Dichloropropane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
1,4-Dichlorobenzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
2,2-Dichloropropane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
2-Chlorotoluene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
4-Chlorotoluene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
4-Isopropyltoluene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Benzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Bromobenzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Bromodichloromethane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Bromoform	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Bromomethane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Carbon tetrachloride	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Chlorobenzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Chloroethane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Chloroform	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Chloromethane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
cis-1,2-Dichloroethene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
cis-1,3-Dichloropropene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Dibromochloromethane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

Client Sample ID MW-41

Lab ID: 1402647-02

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Dichlorodifluoromethane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Ethylbenzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Hexachlorobutadiene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Isopropylbenzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
m,p-Xylene	ND	1.0	1	B4I0195	09/11/2014	09/11/14 11:26	
Methylene chloride	ND	1.0	1	B4I0195	09/11/2014	09/11/14 11:26	
n-Butylbenzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
n-Propylbenzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Naphthalene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
o-Xylene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
sec-Butylbenzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Styrene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
tert-Butylbenzene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Tetrachloroethene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Toluene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
trans-1,2-Dichloroethene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Trichloroethene	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Trichlorofluoromethane	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Vinyl chloride	ND	0.50	1	B4I0195	09/11/2014	09/11/14 11:26	
Surrogate: 1,2-Dichloroethane-d4	98.8 %	64 - 146		B4I0195	09/11/2014	09/11/14 11:26	
Surrogate: 4-Bromofluorobenzene	100 %	60 - 128		B4I0195	09/11/2014	09/11/14 11:26	
Surrogate: Dibromofluoromethane	89.0 %	72 - 141		B4I0195	09/11/2014	09/11/14 11:26	
Surrogate: Toluene-d8	113 %	61 - 124		B4I0195	09/11/2014	09/11/14 11:26	



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San Diego , CA 92122

Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

Client Sample ID MW-41

Lab ID: 1402647-02

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	0.38	0.20	1	B4I0222	09/11/2014	09/11/14 19:24	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>81.8 %</i>	<i>47 - 117</i>		B4I0222	09/11/2014	<i>09/11/14 19:24</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>92.5 %</i>	<i>48 - 121</i>		B4I0222	09/11/2014	<i>09/11/14 19:24</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>89.9 %</i>	<i>58 - 142</i>		B4I0222	09/11/2014	<i>09/11/14 19:24</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>74.6 %</i>	<i>27 - 151</i>		B4I0222	09/11/2014	<i>09/11/14 19:24</i>	



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San Diego , CA 92122

Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

Client Sample ID MW-4100

Lab ID: 1402647-03

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,1,1-Trichloroethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,1,2-Trichloroethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,1-Dichloroethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,1-Dichloroethene	2.1	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,1-Dichloropropene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,2,3-Trichloropropane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,2,3-Trichlorobenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,2,4-Trichlorobenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,2,4-Trimethylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,2-Dibromoethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,2-Dichlorobenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,2-Dichloroethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,2-Dichloropropane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,3,5-Trimethylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,3-Dichlorobenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,3-Dichloropropane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
1,4-Dichlorobenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
2,2-Dichloropropane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
2-Chlorotoluene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
4-Chlorotoluene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
4-Isopropyltoluene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Benzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Bromobenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Bromodichloromethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Bromoform	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Bromomethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Carbon tetrachloride	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Chlorobenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Chloroethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Chloroform	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Chloromethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
cis-1,2-Dichloroethene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
cis-1,3-Dichloropropene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Dibromochloromethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	



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San Diego , CA 92122

Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

Client Sample ID MW-4100

Lab ID: 1402647-03

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Dichlorodifluoromethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Ethylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Hexachlorobutadiene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Isopropylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
m,p-Xylene	ND	1.0	1	B4I0235	09/12/2014	09/12/14 16:04	
Methylene chloride	ND	1.0	1	B4I0235	09/12/2014	09/12/14 16:04	
n-Butylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
n-Propylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Naphthalene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
o-Xylene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
sec-Butylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Styrene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
tert-Butylbenzene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Tetrachloroethene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Toluene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
trans-1,2-Dichloroethene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Trichloroethene	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Trichlorofluoromethane	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Vinyl chloride	ND	0.50	1	B4I0235	09/12/2014	09/12/14 16:04	
Surrogate: 1,2-Dichloroethane-d4	90.4 %	64 - 146		B4I0235	09/12/2014	09/12/14 16:04	
Surrogate: 4-Bromofluorobenzene	105 %	60 - 128		B4I0235	09/12/2014	09/12/14 16:04	
Surrogate: Dibromofluoromethane	83.1 %	72 - 141		B4I0235	09/12/2014	09/12/14 16:04	
Surrogate: Toluene-d8	102 %	61 - 124		B4I0235	09/12/2014	09/12/14 16:04	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

Client Sample ID MW-4100

Lab ID: 1402647-03

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	0.42	0.20	1	B4I0222	09/11/2014	09/11/14 19:52	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	82.3 %	47 - 117		B4I0222	09/11/2014	09/11/14 19:52	
<i>Surrogate: 2-Fluorobiphenyl</i>	92.0 %	48 - 121		B4I0222	09/11/2014	09/11/14 19:52	
<i>Surrogate: 4-Terphenyl-d14</i>	92.7 %	58 - 142		B4I0222	09/11/2014	09/11/14 19:52	
<i>Surrogate: Nitrobenzene-d5</i>	73.9 %	27 - 151		B4I0222	09/11/2014	09/11/14 19:52	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4I0195 - MSVOAW_LL

Blank (B4I0195-BLK1)

Prepared: 9/11/2014 Analyzed: 9/11/2014

1,1,1,2-Tetrachloroethane	ND	0.50				NR			
1,1,1-Trichloroethane	ND	0.50				NR			
1,1,2,2-Tetrachloroethane	ND	0.50				NR			
1,1,2-Trichloroethane	ND	0.50				NR			
1,1-Dichloroethane	ND	0.50				NR			
1,1-Dichloroethene	ND	0.50				NR			
1,1-Dichloropropene	ND	0.50				NR			
1,2,3-Trichloropropane	ND	0.50				NR			
1,2,3-Trichlorobenzene	ND	0.50				NR			
1,2,4-Trichlorobenzene	ND	0.50				NR			
1,2,4-Trimethylbenzene	ND	0.50				NR			
1,2-Dibromo-3-chloropropane	ND	0.50				NR			
1,2-Dibromoethane	ND	0.50				NR			
1,2-Dichlorobenzene	ND	0.50				NR			
1,2-Dichloroethane	ND	0.50				NR			
1,2-Dichloropropane	ND	0.50				NR			
1,3,5-Trimethylbenzene	ND	0.50				NR			
1,3-Dichlorobenzene	ND	0.50				NR			
1,3-Dichloropropane	ND	0.50				NR			
1,4-Dichlorobenzene	ND	0.50				NR			
2,2-Dichloropropane	ND	0.50				NR			
2-Chlorotoluene	ND	0.50				NR			
4-Chlorotoluene	ND	0.50				NR			
4-Isopropyltoluene	ND	0.50				NR			
Benzene	ND	0.50				NR			
Bromobenzene	ND	0.50				NR			
Bromodichloromethane	ND	0.50				NR			
Bromoform	ND	0.50				NR			
Bromomethane	ND	0.50				NR			
Carbon tetrachloride	ND	0.50				NR			
Chlorobenzene	ND	0.50				NR			
Chloroethane	ND	0.50				NR			
Chloroform	ND	0.50				NR			
Chloromethane	ND	0.50				NR			
cis-1,2-Dichloroethene	ND	0.50				NR			
cis-1,3-Dichloropropene	ND	0.50				NR			
Dibromochloromethane	ND	0.50				NR			
Dibromomethane	ND	0.50				NR			
Dichlorodifluoromethane	ND	0.50				NR			



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4I0195 - MSVOAW_LL (continued)

Blank (B4I0195-BLK1) - Continued

Prepared: 9/11/2014 Analyzed: 9/11/2014

Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	24.28		25.0000		97.1	64 - 146			
Surrogate: 4-Bromofluorobenzene	24.87		25.0000		99.5	60 - 128			
Surrogate: Dibromofluoromethane	22.24		25.0000		89.0	72 - 141			
Surrogate: Toluene-d8	28.62		25.0000		114	61 - 124			

LCS (B4I0195-BS1)

Prepared: 9/11/2014 Analyzed: 9/11/2014

1,1-Dichloroethene	19.1400		20.0000		95.7	56 - 131			
Benzene	42.7400		40.0000		107	69 - 139			
Chlorobenzene	21.1000		20.0000		106	73 - 127			
MTBE	19.3400		20.0000		96.7	68 - 133			
Toluene	49.4400		40.0000		124	62 - 133			
Trichloroethene	22.0000		20.0000		110	72 - 139			
Surrogate: 1,2-Dichloroethane-d4	22.73		25.0000		90.9	64 - 146			
Surrogate: 4-Bromofluorobenzene	23.35		25.0000		93.4	60 - 128			
Surrogate: Dibromofluoromethane	21.40		25.0000		85.6	72 - 141			
Surrogate: Toluene-d8	27.79		25.0000		111	61 - 124			

LCS Dup (B4I0195-BSD1)

Prepared: 9/11/2014 Analyzed: 9/11/2014

1,1-Dichloroethene	19.0300		20.0000		95.2	56 - 131	0.576	20	
Benzene	42.4700		40.0000		106	69 - 139	0.634	20	
Chlorobenzene	20.7100		20.0000		104	73 - 127	1.87	20	
MTBE	19.1300		20.0000		95.6	68 - 133	1.09	20	
Toluene	48.6800		40.0000		122	62 - 133	1.55	20	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4I0195 - MSVOAW_LL (continued)

LCS Dup (B4I0195-BSD1) - Continued

Prepared: 9/11/2014 Analyzed: 9/11/2014

Trichloroethene	21.3900		20.0000		107	72 - 139	2.81	20	
Surrogate: 1,2-Dichloroethane-d4	22.68		25.0000		90.7	64 - 146			
Surrogate: 4-Bromofluorobenzene	23.49		25.0000		94.0	60 - 128			
Surrogate: Dibromofluoromethane	20.92		25.0000		83.7	72 - 141			
Surrogate: Toluene-d8	27.71		25.0000		111	61 - 124			

Batch B4I0235 - MSVOAW_LL

Blank (B4I0235-BLK1)

Prepared: 9/12/2014 Analyzed: 9/12/2014

1,1,1,2-Tetrachloroethane	ND	0.50		NR
1,1,1-Trichloroethane	ND	0.50		NR
1,1,2,2-Tetrachloroethane	ND	0.50		NR
1,1,2-Trichloroethane	ND	0.50		NR
1,1-Dichloroethane	ND	0.50		NR
1,1-Dichloroethene	ND	0.50		NR
1,1-Dichloropropene	ND	0.50		NR
1,2,3-Trichloropropane	ND	0.50		NR
1,2,3-Trichlorobenzene	ND	0.50		NR
1,2,4-Trichlorobenzene	ND	0.50		NR
1,2,4-Trimethylbenzene	ND	0.50		NR
1,2-Dibromo-3-chloropropane	ND	0.50		NR
1,2-Dibromoethane	ND	0.50		NR
1,2-Dichlorobenzene	ND	0.50		NR
1,2-Dichloroethane	ND	0.50		NR
1,2-Dichloropropane	ND	0.50		NR
1,3,5-Trimethylbenzene	ND	0.50		NR
1,3-Dichlorobenzene	ND	0.50		NR
1,3-Dichloropropane	ND	0.50		NR
1,4-Dichlorobenzene	ND	0.50		NR
2,2-Dichloropropane	ND	0.50		NR
2-Chlorotoluene	ND	0.50		NR
4-Chlorotoluene	ND	0.50		NR
4-Isopropyltoluene	ND	0.50		NR
Benzene	ND	0.50		NR
Bromobenzene	ND	0.50		NR
Bromodichloromethane	ND	0.50		NR
Bromoform	ND	0.50		NR
Bromomethane	ND	0.50		NR
Carbon tetrachloride	ND	0.50		NR
Chlorobenzene	ND	0.50		NR
Chloroethane	ND	0.50		NR



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4I0235 - MSVOAW_LL (continued)

Blank (B4I0235-BLK1) - Continued

Prepared: 9/12/2014 Analyzed: 9/12/2014

Chloroform	ND	0.50			NR				
Chloromethane	ND	0.50			NR				
cis-1,2-Dichloroethene	ND	0.50			NR				
cis-1,3-Dichloropropene	ND	0.50			NR				
Dibromochloromethane	ND	0.50			NR				
Dibromomethane	ND	0.50			NR				
Dichlorodifluoromethane	ND	0.50			NR				
Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	25.80		25.0000		103	64 - 146			
Surrogate: 4-Bromofluorobenzene	27.50		25.0000		110	60 - 128			
Surrogate: Dibromofluoromethane	23.27		25.0000		93.1	72 - 141			
Surrogate: Toluene-d8	28.88		25.0000		116	61 - 124			

LCS (B4I0235-BS1)

Prepared: 9/12/2014 Analyzed: 9/12/2014

1,1-Dichloroethene	16.0500		20.0000		80.2	56 - 131			
Benzene	37.5000		40.0000		93.8	69 - 139			
Chlorobenzene	18.5000		20.0000		92.5	73 - 127			
MTBE	16.6600		20.0000		83.3	68 - 133			
Toluene	42.9000		40.0000		107	62 - 133			
Trichloroethene	19.0200		20.0000		95.1	72 - 139			
Surrogate: 1,2-Dichloroethane-d4	22.56		25.0000		90.2	64 - 146			
Surrogate: 4-Bromofluorobenzene	25.01		25.0000		100	60 - 128			
Surrogate: Dibromofluoromethane	20.56		25.0000		82.2	72 - 141			
Surrogate: Toluene-d8	27.42		25.0000		110	61 - 124			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4I0235 - MSVOAW_LL (continued)

LCS Dup (B4I0235-BSD1)

Prepared: 9/12/2014 Analyzed: 9/12/2014

1,1-Dichloroethene	17.1800		20.0000		85.9	56 - 131	6.80	20	
Benzene	38.6300		40.0000		96.6	69 - 139	2.97	20	
Chlorobenzene	19.1500		20.0000		95.8	73 - 127	3.45	20	
MTBE	18.3200		20.0000		91.6	68 - 133	9.49	20	
Toluene	44.5200		40.0000		111	62 - 133	3.71	20	
Trichloroethene	19.5700		20.0000		97.8	72 - 139	2.85	20	

Surrogate: 1,2-Dichloroethane-d4	22.48		25.0000		89.9	64 - 146			
Surrogate: 4-Bromofluorobenzene	24.03		25.0000		96.1	60 - 128			
Surrogate: Dibromofluoromethane	20.07		25.0000		80.3	72 - 141			
Surrogate: Toluene-d8	25.94		25.0000		104	61 - 124			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4I0222 - MSSEMI_ISOTOPEDILN

Blank (B4I0222-BLK1)

Prepared: 9/11/2014 Analyzed: 9/11/2014

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.8137		1.00000		81.4	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.9247		1.00000		92.5	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9744		1.00000		97.4	58 - 142			
Surrogate: Nitrobenzene-d5	0.7484		1.00000		74.8	27 - 151			

LCS (B4I0222-BS1)

Prepared: 9/11/2014 Analyzed: 9/11/2014

1,4-Dioxane	1.50501	0.20	1.00000		151	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.6504		1.00000		65.0	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7633		1.00000		76.3	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9262		1.00000		92.6	58 - 142			
Surrogate: Nitrobenzene-d5	0.6395		1.00000		63.9	27 - 151			

LCS Dup (B4I0222-BSD1)

Prepared: 9/11/2014 Analyzed: 9/11/2014

1,4-Dioxane	1.45019	0.20	1.00000		145	58 - 151	3.71	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.6663		1.00000		66.6	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7654		1.00000		76.5	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9154		1.00000		91.5	58 - 142			
Surrogate: Nitrobenzene-d5	0.6425		1.00000		64.3	27 - 151			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON, 532.30

Report To : Steve Netto

Reported : 09/17/2014

Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



DATE 9/10/14 PAGE 1 OF

PROJECT NAME		PROJECT No./TASK No.		SAMPLE CONTAINERS		ANALYSIS REQUESTED		ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S		SPECIAL HANDLING		LABORATORY INFORMATION			
RAYTHEON		532.30										ATL			
PROJECT MANAGER STEVE NETTO		Phone No. 858-455-6500										Attn: Rachelle Arada			
QA MANAGER		Fax No. 858-455-6533													
SAMPLER (SIGNATURE)		SAMPLER (PRINTED)													
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX			PRESERVATION								
		Date	Time	Soil	Ground water	Surface water	Lab H2O	HCl	HNO3	NaOH	H2SO4	Ice			
1402647-1	TB-091014A	9/10/14	0800					X	X			X	40 ml VOA		
-2	MW-41		1415	X				X				X	1L Amber		
-3	MW-4100		1430	X				X				X	VOCs 8260B		
				X								X	1,4-Dioxane 8270 MCD		
													1,4-Dioxane 8270 SIM		
													0-10		
													10-100		
													100-1,000		
													1,000-10,000		
													>10,000		
													STANDARD TAT		
													HS		
													MSD		
													48 HOUR TAT		
Total number of Containers per analysis:													8		
Total No. of Containers:													10		
Relinquished by:		Date	Received by:	Date	INSTRUCTIONS									Shipment Method:	
H+H, INC		9-10-14	ATL	9-10-14	1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness.									COURIER	
Company		Time	Company	Time	2. Complete in ballpoint pen. Draw one line through errors, initial and date correction.									Send Results to: STEVE NETTO	
		15:00		1500	3. Indicate number of sample containers in analysis request space; indicate choice with ✓ or x.									☒ 9171 TOWNE CENTRE DRIVE, SUITE 375 SAN DIEGO, CA 92122 (858) 455-6500	
Relinquished by:		Date	Received by:	Date	4. Note applicable preservatives, special instructions, and deviations from typical environmental samples.									☐ 1640 SOUTH STAPLEY DRIVE, SUITE 209 MESA, AZ 85204 (480) 345-0888	
ATL		9-10-14	ATL	9-10-14	5. Consult project QA documents for specific instructions.									☐ 1820 EAST RIVER ROAD, SUITE 220 TUCSON, AZ 85718 (520) 881-7300	
Company		Time	Company	Time	Sample Receipt:									Send invoice to San Diego, CA Attn: Accounts Payable	
		15:38		1538	☒ No. of containers correct									☒ received good condition/cold	
					☐ custody seals secure									☐ conforms to COC document	



October 01, 2014

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1402817
Client Reference : Raytheon Main, 532.30

Enclosed are the results for sample(s) received on September 24, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'E Rodriguez', is placed over a light gray rectangular background.

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 10/01/2014

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-09242014A	1402817-01	Lab H2O	9/24/14 10:30	9/24/14 14:00
MW-41	1402817-02	Groundwater	9/24/14 11:25	9/24/14 14:00
MW-4100	1402817-03	Groundwater	9/24/14 12:00	9/24/14 14:00



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 10/01/2014

Client Sample ID TB-09242014A

Lab ID: 1402817-01

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,1,1-Trichloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,1,2-Trichloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,1-Dichloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,1-Dichloroethene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,1-Dichloropropene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,2,3-Trichloropropane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,2,3-Trichlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,2,4-Trichlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,2,4-Trimethylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,2-Dibromoethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,2-Dichlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,2-Dichloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,2-Dichloropropane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,3,5-Trimethylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,3-Dichlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,3-Dichloropropane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
1,4-Dichlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
2,2-Dichloropropane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
2-Chlorotoluene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
4-Chlorotoluene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
4-Isopropyltoluene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Benzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Bromobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Bromodichloromethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Bromoform	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Bromomethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Carbon tetrachloride	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Chlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Chloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Chloroform	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Chloromethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
cis-1,2-Dichloroethene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
cis-1,3-Dichloropropene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Dibromochloromethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 10/01/2014

Client Sample ID TB-09242014A

Lab ID: 1402817-01

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Dichlorodifluoromethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Ethylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Hexachlorobutadiene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Isopropylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
m,p-Xylene	ND	1.0	1	B4I0450	09/25/2014	09/25/14 14:09	
Methylene chloride	ND	1.0	1	B4I0450	09/25/2014	09/25/14 14:09	
n-Butylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
n-Propylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Naphthalene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
o-Xylene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
sec-Butylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Styrene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
tert-Butylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Tetrachloroethene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Toluene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
trans-1,2-Dichloroethene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Trichloroethene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Trichlorofluoromethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Vinyl chloride	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:09	
Surrogate: 1,2-Dichloroethane-d4	115 %	64 - 146		B4I0450	09/25/2014	09/25/14 14:09	
Surrogate: 4-Bromofluorobenzene	97.4 %	60 - 128		B4I0450	09/25/2014	09/25/14 14:09	
Surrogate: Dibromofluoromethane	112 %	72 - 141		B4I0450	09/25/2014	09/25/14 14:09	
Surrogate: Toluene-d8	97.2 %	61 - 124		B4I0450	09/25/2014	09/25/14 14:09	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 10/01/2014

Client Sample ID MW-41

Lab ID: 1402817-02

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,1,1-Trichloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,1,2-Trichloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,1-Dichloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,1-Dichloroethene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,1-Dichloropropene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,2,3-Trichloropropane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,2,3-Trichlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,2,4-Trichlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,2,4-Trimethylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,2-Dibromoethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,2-Dichlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,2-Dichloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,2-Dichloropropane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,3,5-Trimethylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,3-Dichlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,3-Dichloropropane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
1,4-Dichlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
2,2-Dichloropropane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
2-Chlorotoluene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
4-Chlorotoluene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
4-Isopropyltoluene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Benzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Bromobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Bromodichloromethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Bromoform	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Bromomethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Carbon tetrachloride	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Chlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Chloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Chloroform	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Chloromethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
cis-1,2-Dichloroethene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
cis-1,3-Dichloropropene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Dibromochloromethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 10/01/2014

Client Sample ID MW-41

Lab ID: 1402817-02

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Dichlorodifluoromethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Ethylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Hexachlorobutadiene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Isopropylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
m,p-Xylene	ND	1.0	1	B4I0450	09/25/2014	09/25/14 14:32	
Methylene chloride	ND	1.0	1	B4I0450	09/25/2014	09/25/14 14:32	
n-Butylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
n-Propylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Naphthalene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
o-Xylene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
sec-Butylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Styrene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
tert-Butylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Tetrachloroethene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Toluene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
trans-1,2-Dichloroethene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Trichloroethene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Trichlorofluoromethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Vinyl chloride	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:32	
Surrogate: 1,2-Dichloroethane-d4	108 %	64 - 146		B4I0450	09/25/2014	09/25/14 14:32	
Surrogate: 4-Bromofluorobenzene	89.9 %	60 - 128		B4I0450	09/25/2014	09/25/14 14:32	
Surrogate: Dibromofluoromethane	107 %	72 - 141		B4I0450	09/25/2014	09/25/14 14:32	
Surrogate: Toluene-d8	90.8 %	61 - 124		B4I0450	09/25/2014	09/25/14 14:32	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 10/01/2014

Client Sample ID MW-41

Lab ID: 1402817-02

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B4I0595	09/30/2014	09/30/14 17:40	
Surrogate: 1,2-Dichlorobenzene-d4	67.9 %	47 - 117		B4I0595	09/30/2014	09/30/14 17:40	
Surrogate: 2-Fluorobiphenyl	78.5 %	48 - 121		B4I0595	09/30/2014	09/30/14 17:40	
Surrogate: 4-Terphenyl-d14	95.3 %	58 - 142		B4I0595	09/30/2014	09/30/14 17:40	
Surrogate: Nitrobenzene-d5	81.9 %	27 - 151		B4I0595	09/30/2014	09/30/14 17:40	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 10/01/2014

Client Sample ID MW-4100

Lab ID: 1402817-03

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,1,1-Trichloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,1,2-Trichloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,1-Dichloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,1-Dichloroethene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,1-Dichloropropene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,2,3-Trichloropropane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,2,3-Trichlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,2,4-Trichlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,2,4-Trimethylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,2-Dibromoethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,2-Dichlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,2-Dichloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,2-Dichloropropane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,3,5-Trimethylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,3-Dichlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,3-Dichloropropane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
1,4-Dichlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
2,2-Dichloropropane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
2-Chlorotoluene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
4-Chlorotoluene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
4-Isopropyltoluene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Benzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Bromobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Bromodichloromethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Bromoform	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Bromomethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Carbon tetrachloride	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Chlorobenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Chloroethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Chloroform	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Chloromethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
cis-1,2-Dichloroethene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
cis-1,3-Dichloropropene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Dibromochloromethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 10/01/2014

Client Sample ID MW-4100

Lab ID: 1402817-03

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Dichlorodifluoromethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Ethylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Hexachlorobutadiene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Isopropylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
m,p-Xylene	ND	1.0	1	B4I0450	09/25/2014	09/25/14 14:55	
Methylene chloride	ND	1.0	1	B4I0450	09/25/2014	09/25/14 14:55	
n-Butylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
n-Propylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Naphthalene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
o-Xylene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
sec-Butylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Styrene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
tert-Butylbenzene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Tetrachloroethene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Toluene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
trans-1,2-Dichloroethene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Trichloroethene	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Trichlorofluoromethane	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Vinyl chloride	ND	0.50	1	B4I0450	09/25/2014	09/25/14 14:55	
Surrogate: 1,2-Dichloroethane-d4	111 %	64 - 146		B4I0450	09/25/2014	09/25/14 14:55	
Surrogate: 4-Bromofluorobenzene	90.3 %	60 - 128		B4I0450	09/25/2014	09/25/14 14:55	
Surrogate: Dibromofluoromethane	108 %	72 - 141		B4I0450	09/25/2014	09/25/14 14:55	
Surrogate: Toluene-d8	92.8 %	61 - 124		B4I0450	09/25/2014	09/25/14 14:55	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 10/01/2014

Client Sample ID MW-4100

Lab ID: 1402817-03

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B4I0595	09/30/2014	09/30/14 18:08	
Surrogate: 1,2-Dichlorobenzene-d4	66.1 %	47 - 117		B4I0595	09/30/2014	09/30/14 18:08	
Surrogate: 2-Fluorobiphenyl	76.1 %	48 - 121		B4I0595	09/30/2014	09/30/14 18:08	
Surrogate: 4-Terphenyl-d14	93.1 %	58 - 142		B4I0595	09/30/2014	09/30/14 18:08	
Surrogate: Nitrobenzene-d5	78.2 %	27 - 151		B4I0595	09/30/2014	09/30/14 18:08	



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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 10/01/2014

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4I0450 - MSVOAW_LL

Blank (B4I0450-BLK1)

Prepared: 9/25/2014 Analyzed: 9/25/2014

1,1,1,2-Tetrachloroethane	ND	0.50				NR			
1,1,1-Trichloroethane	ND	0.50				NR			
1,1,2,2-Tetrachloroethane	ND	0.50				NR			
1,1,2-Trichloroethane	ND	0.50				NR			
1,1-Dichloroethane	ND	0.50				NR			
1,1-Dichloroethene	ND	0.50				NR			
1,1-Dichloropropene	ND	0.50				NR			
1,2,3-Trichloropropane	ND	0.50				NR			
1,2,3-Trichlorobenzene	ND	0.50				NR			
1,2,4-Trichlorobenzene	ND	0.50				NR			
1,2,4-Trimethylbenzene	ND	0.50				NR			
1,2-Dibromo-3-chloropropane	ND	0.50				NR			
1,2-Dibromoethane	ND	0.50				NR			
1,2-Dichlorobenzene	ND	0.50				NR			
1,2-Dichloroethane	ND	0.50				NR			
1,2-Dichloropropane	ND	0.50				NR			
1,3,5-Trimethylbenzene	ND	0.50				NR			
1,3-Dichlorobenzene	ND	0.50				NR			
1,3-Dichloropropane	ND	0.50				NR			
1,4-Dichlorobenzene	ND	0.50				NR			
2,2-Dichloropropane	ND	0.50				NR			
2-Chlorotoluene	ND	0.50				NR			
4-Chlorotoluene	ND	0.50				NR			
4-Isopropyltoluene	ND	0.50				NR			
Benzene	ND	0.50				NR			
Bromobenzene	ND	0.50				NR			
Bromodichloromethane	ND	0.50				NR			
Bromoform	ND	0.50				NR			
Bromomethane	ND	0.50				NR			
Carbon tetrachloride	ND	0.50				NR			
Chlorobenzene	ND	0.50				NR			
Chloroethane	ND	0.50				NR			
Chloroform	ND	0.50				NR			
Chloromethane	ND	0.50				NR			
cis-1,2-Dichloroethene	ND	0.50				NR			
cis-1,3-Dichloropropene	ND	0.50				NR			
Dibromochloromethane	ND	0.50				NR			
Dibromomethane	ND	0.50				NR			
Dichlorodifluoromethane	ND	0.50				NR			



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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 10/01/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4I0450 - MSVOAW_LL (continued)

Blank (B4I0450-BLK1) - Continued

Prepared: 9/25/2014 Analyzed: 9/25/2014

Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	27.62		25.0000		110	64 - 146			
Surrogate: 4-Bromofluorobenzene	23.84		25.0000		95.4	60 - 128			
Surrogate: Dibromofluoromethane	28.02		25.0000		112	72 - 141			
Surrogate: Toluene-d8	24.11		25.0000		96.4	61 - 124			

LCS (B4I0450-BS1)

Prepared: 9/25/2014 Analyzed: 9/25/2014

1,1-Dichloroethene	23.9400		20.0000		120	56 - 131			
Benzene	46.4300		40.0000		116	69 - 139			
Chlorobenzene	23.8800		20.0000		119	73 - 127			
MTBE	22.6300		20.0000		113	68 - 133			
Toluene	50.2100		40.0000		126	62 - 133			
Trichloroethene	22.7300		20.0000		114	72 - 139			
Surrogate: 1,2-Dichloroethane-d4	26.74		25.0000		107	64 - 146			
Surrogate: 4-Bromofluorobenzene	23.07		25.0000		92.3	60 - 128			
Surrogate: Dibromofluoromethane	27.11		25.0000		108	72 - 141			
Surrogate: Toluene-d8	25.17		25.0000		101	61 - 124			

LCS Dup (B4I0450-BSD1)

Prepared: 9/25/2014 Analyzed: 9/25/2014

1,1-Dichloroethene	21.5700		20.0000		108	56 - 131	10.4	20	
Benzene	44.6100		40.0000		112	69 - 139	4.00	20	
Chlorobenzene	22.5500		20.0000		113	73 - 127	5.73	20	
MTBE	20.6100		20.0000		103	68 - 133	9.34	20	
Toluene	47.9400		40.0000		120	62 - 133	4.63	20	



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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 10/01/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4I0450 - MSVOAW_LL (continued)

LCS Dup (B4I0450-BSD1) - Continued

Prepared: 9/25/2014 Analyzed: 9/25/2014

Trichloroethene	21.9900		20.0000		110	72 - 139	3.31	20	
Surrogate: 1,2-Dichloroethane-d4	23.56		25.0000		94.2	64 - 146			
Surrogate: 4-Bromofluorobenzene	22.42		25.0000		89.7	60 - 128			
Surrogate: Dibromofluoromethane	24.49		25.0000		98.0	72 - 141			
Surrogate: Toluene-d8	24.48		25.0000		97.9	61 - 124			



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 10/01/2014

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4I0595 - MSSEMI_ISOTOPEDILN

Blank (B4I0595-BLK1)

Prepared: 9/30/2014 Analyzed: 9/30/2014

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.6644		1.00000		66.4	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7758		1.00000		77.6	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9510		1.00000		95.1	58 - 142			
Surrogate: Nitrobenzene-d5	0.8066		1.00000		80.7	27 - 151			

LCS (B4I0595-BS1)

Prepared: 9/30/2014 Analyzed: 9/30/2014

1,4-Dioxane	0.976770	0.20	1.00000		97.7	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.6768		1.00000		67.7	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7592		1.00000		75.9	48 - 121			
Surrogate: 4-Terphenyl-d14	0.8913		1.00000		89.1	58 - 142			
Surrogate: Nitrobenzene-d5	0.8694		1.00000		86.9	27 - 151			

LCS Dup (B4I0595-BSD1)

Prepared: 9/30/2014 Analyzed: 9/30/2014

1,4-Dioxane	0.929830	0.20	1.00000		93.0	58 - 151	4.92	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.6900		1.00000		69.0	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7910		1.00000		79.1	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9344		1.00000		93.4	58 - 142			
Surrogate: Nitrobenzene-d5	0.8298		1.00000		83.0	27 - 151			



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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 10/01/2014

Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

ORIGINAL: LABORATORY YELLOW: QA MANAGER PINK: FIELD/TASK MANAGER



November 13, 2014

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1403384
Client Reference : RAYTHEON MAIN, 532.30

Enclosed are the results for sample(s) received on November 05, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'E Rodriguez', is placed above the printed name.

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-110414A	1403384-01	Lab H2O	11/04/14 12:00	11/05/14 17:00
MW-21	1403384-02	Groundwater	11/04/14 13:55	11/05/14 17:00
EW-01	1403384-03	Groundwater	11/04/14 14:10	11/05/14 17:00
EW-0100	1403384-04	Groundwater	11/04/14 16:10	11/05/14 17:00
MW-32B	1403384-05	Groundwater	11/05/14 10:30	11/05/14 17:00
MW 36	1403384-06	Groundwater	11/05/14 13:51	11/05/14 17:00
MW 33	1403384-07	Groundwater	11/05/14 16:24	11/05/14 17:00
MW-41	1403384-08	Groundwater	11/05/14 10:04	11/05/14 17:00
MW-38	1403384-09	Groundwater	11/05/14 10:52	11/05/14 17:00
MW-34B	1403384-10	Groundwater	11/05/14 13:20	11/05/14 17:00
MW-3400B	1403384-11	Groundwater	11/05/14 13:30	11/05/14 17:00
MW-30B	1403384-12	Groundwater	11/05/14 14:20	11/05/14 17:00
MW-30A	1403384-13	Groundwater	11/05/14 14:40	11/05/14 17:00
MW-28	1403384-14	Groundwater	11/05/14 15:30	11/05/14 17:00



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID TB-110414A

Lab ID: 1403384-01

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,1,1-Trichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,1,2-Trichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,1-Dichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,1-Dichloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,1-Dichloropropene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,2,3-Trichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,2-Dibromoethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,2-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,2-Dichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,2-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,3-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,3-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
1,4-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
2,2-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
2-Chlorotoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
4-Chlorotoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
4-Isopropyltoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Benzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Bromobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Bromodichloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Bromoform	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Bromomethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Carbon tetrachloride	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Chlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Chloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Chloroform	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Chloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Dibromochloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID TB-110414A

Lab ID: 1403384-01

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Dichlorodifluoromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Ethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Hexachlorobutadiene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Isopropylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
m,p-Xylene	ND	1.0	1	B4K0129	11/07/2014	11/07/14 10:50	
Methylene chloride	ND	1.0	1	B4K0129	11/07/2014	11/07/14 10:50	
n-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
n-Propylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Naphthalene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
o-Xylene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
sec-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Styrene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
tert-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Tetrachloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Toluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Trichloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Trichlorofluoromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Vinyl chloride	ND	0.50	1	B4K0129	11/07/2014	11/07/14 10:50	
Surrogate: 1,2-Dichloroethane-d4	88.0 %	64 - 146		B4K0129	11/07/2014	11/07/14 10:50	
Surrogate: 4-Bromofluorobenzene	92.3 %	60 - 128		B4K0129	11/07/2014	11/07/14 10:50	
Surrogate: Dibromofluoromethane	89.9 %	72 - 141		B4K0129	11/07/2014	11/07/14 10:50	
Surrogate: Toluene-d8	87.0 %	61 - 124		B4K0129	11/07/2014	11/07/14 10:50	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-21

Lab ID: 1403384-02

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,1,1-Trichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,1,2-Trichloroethane	1.5	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,1-Dichloroethane	4.6	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,1-Dichloroethene	350	10	20	B4K0129	11/07/2014	11/07/14 11:15	
1,1-Dichloropropene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,2,3-Trichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,2-Dibromoethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,2-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,2-Dichloroethane	0.72	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,2-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,3-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,3-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
1,4-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
2,2-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
2-Chlorotoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
4-Chlorotoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
4-Isopropyltoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Benzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Bromobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Bromodichloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Bromoform	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Bromomethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Carbon tetrachloride	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Chlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Chloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Chloroform	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Chloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
cis-1,2-Dichloroethene	1.1	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Dibromochloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-21

Lab ID: 1403384-02

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Dichlorodifluoromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Ethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Hexachlorobutadiene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Isopropylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
m,p-Xylene	ND	1.0	1	B4K0129	11/07/2014	11/07/14 14:28	
Methylene chloride	ND	1.0	1	B4K0129	11/07/2014	11/07/14 14:28	
n-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
n-Propylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Naphthalene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
o-Xylene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
sec-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Styrene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
tert-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Tetrachloroethene	0.85	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Toluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Trichloroethene	19	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Trichlorofluoromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
Vinyl chloride	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:28	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>85.8 %</i>	<i>64 - 146</i>		B4K0129	11/07/2014	<i>11/07/14 11:15</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>91.5 %</i>	<i>64 - 146</i>		B4K0129	11/07/2014	<i>11/07/14 14:28</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>89.3 %</i>	<i>60 - 128</i>		B4K0129	11/07/2014	<i>11/07/14 11:15</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91.5 %</i>	<i>60 - 128</i>		B4K0129	11/07/2014	<i>11/07/14 14:28</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>89.8 %</i>	<i>72 - 141</i>		B4K0129	11/07/2014	<i>11/07/14 14:28</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>85.5 %</i>	<i>72 - 141</i>		B4K0129	11/07/2014	<i>11/07/14 11:15</i>	
<i>Surrogate: Toluene-d8</i>	<i>80.4 %</i>	<i>61 - 124</i>		B4K0129	11/07/2014	<i>11/07/14 14:28</i>	
<i>Surrogate: Toluene-d8</i>	<i>83.5 %</i>	<i>61 - 124</i>		B4K0129	11/07/2014	<i>11/07/14 11:15</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-21

Lab ID: 1403384-02

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	54	2.0	1	B4K0122	11/07/2014	11/07/14 14:46	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>64.9 %</i>	<i>42 - 106</i>		B4K0122	11/07/2014	<i>11/07/14 14:46</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>82.2 %</i>	<i>55 - 117</i>		B4K0122	11/07/2014	<i>11/07/14 14:46</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>94.4 %</i>	<i>52 - 142</i>		B4K0122	11/07/2014	<i>11/07/14 14:46</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>93.8 %</i>	<i>43 - 116</i>		B4K0122	11/07/2014	<i>11/07/14 14:46</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID EW-01

Lab ID: 1403384-03

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,1,1-Trichloroethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,1,2,2-Tetrachloroethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,1,2-Trichloroethane	9.0	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,1-Dichloroethane	16	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,1-Dichloroethene	960	5.0	10	B4K0129	11/07/2014	11/07/14 12:04	
1,1-Dichloropropene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,2,3-Trichloropropane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,2,3-Trichlorobenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,2,4-Trichlorobenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,2,4-Trimethylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,2-Dibromo-3-chloropropane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,2-Dibromoethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,2-Dichlorobenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,2-Dichloroethane	4.0	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,2-Dichloropropane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,3,5-Trimethylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,3-Dichlorobenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,3-Dichloropropane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
1,4-Dichlorobenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
2,2-Dichloropropane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
2-Chlorotoluene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
4-Chlorotoluene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
4-Isopropyltoluene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Benzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Bromobenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Bromodichloromethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Bromoform	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Bromomethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Carbon tetrachloride	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Chlorobenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Chloroethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Chloroform	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Chloromethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
cis-1,2-Dichloroethene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
cis-1,3-Dichloropropene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Dibromochloromethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID EW-01

Lab ID: 1403384-03

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Dichlorodifluoromethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Ethylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Hexachlorobutadiene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Isopropylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
m,p-Xylene	ND	4.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Methylene chloride	ND	4.0	4	B4K0129	11/07/2014	11/07/14 13:16	
n-Butylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
n-Propylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Naphthalene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
o-Xylene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
sec-Butylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Styrene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
tert-Butylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Tetrachloroethene	4.3	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Toluene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
trans-1,2-Dichloroethene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Trichloroethene	3.3	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Trichlorofluoromethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
Vinyl chloride	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:16	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>79.0 %</i>	<i>64 - 146</i>		B4K0129	11/07/2014	<i>11/07/14 12:04</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.0 %</i>	<i>64 - 146</i>		B4K0129	11/07/2014	<i>11/07/14 13:16</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.6 %</i>	<i>60 - 128</i>		B4K0129	11/07/2014	<i>11/07/14 12:04</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.7 %</i>	<i>60 - 128</i>		B4K0129	11/07/2014	<i>11/07/14 13:16</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>90.6 %</i>	<i>72 - 141</i>		B4K0129	11/07/2014	<i>11/07/14 13:16</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>80.7 %</i>	<i>72 - 141</i>		B4K0129	11/07/2014	<i>11/07/14 12:04</i>	
<i>Surrogate: Toluene-d8</i>	<i>86.3 %</i>	<i>61 - 124</i>		B4K0129	11/07/2014	<i>11/07/14 13:16</i>	
<i>Surrogate: Toluene-d8</i>	<i>65.0 %</i>	<i>61 - 124</i>		B4K0129	11/07/2014	<i>11/07/14 12:04</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID EW-01

Lab ID: 1403384-03

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	990	20	10	B4K0122	11/07/2014	11/11/14 08:57	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>42.1 %</i>	<i>42 - 106</i>		B4K0122	11/07/2014	<i>11/11/14 08:57</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>50.4 %</i>	<i>55 - 117</i>		B4K0122	11/07/2014	<i>11/11/14 08:57</i>	S10
<i>Surrogate: 4-Terphenyl-d14</i>	<i>67.2 %</i>	<i>52 - 142</i>		B4K0122	11/07/2014	<i>11/11/14 08:57</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>44.3 %</i>	<i>43 - 116</i>		B4K0122	11/07/2014	<i>11/11/14 08:57</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID EW-0100

Lab ID: 1403384-04

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,1,1-Trichloroethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,1,2,2-Tetrachloroethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,1,2-Trichloroethane	9.0	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,1-Dichloroethane	16	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,1-Dichloroethene	1000	10	20	B4K0129	11/07/2014	11/07/14 18:07	
1,1-Dichloropropene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,2,3-Trichloropropane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,2,3-Trichlorobenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,2,4-Trichlorobenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,2,4-Trimethylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,2-Dibromo-3-chloropropane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,2-Dibromoethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,2-Dichlorobenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,2-Dichloroethane	4.2	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,2-Dichloropropane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,3,5-Trimethylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,3-Dichlorobenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,3-Dichloropropane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
1,4-Dichlorobenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
2,2-Dichloropropane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
2-Chlorotoluene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
4-Chlorotoluene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
4-Isopropyltoluene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Benzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Bromobenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Bromodichloromethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Bromoform	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Bromomethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Carbon tetrachloride	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Chlorobenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Chloroethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Chloroform	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Chloromethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
cis-1,2-Dichloroethene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
cis-1,3-Dichloropropene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Dibromochloromethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID EW-0100

Lab ID: 1403384-04

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Dichlorodifluoromethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Ethylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Hexachlorobutadiene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Isopropylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
m,p-Xylene	ND	4.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Methylene chloride	ND	4.0	4	B4K0129	11/07/2014	11/07/14 13:40	
n-Butylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
n-Propylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Naphthalene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
o-Xylene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
sec-Butylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Styrene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
tert-Butylbenzene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Tetrachloroethene	3.6	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Toluene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
trans-1,2-Dichloroethene	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Trichloroethene	3.0	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Trichlorofluoromethane	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
Vinyl chloride	ND	2.0	4	B4K0129	11/07/2014	11/07/14 13:40	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>93.2 %</i>	<i>64 - 146</i>		B4K0129	11/07/2014	<i>11/07/14 18:07</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.7 %</i>	<i>64 - 146</i>		B4K0129	11/07/2014	<i>11/07/14 13:40</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.7 %</i>	<i>60 - 128</i>		B4K0129	11/07/2014	<i>11/07/14 18:07</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.4 %</i>	<i>60 - 128</i>		B4K0129	11/07/2014	<i>11/07/14 13:40</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>94.9 %</i>	<i>72 - 141</i>		B4K0129	11/07/2014	<i>11/07/14 13:40</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>90.6 %</i>	<i>72 - 141</i>		B4K0129	11/07/2014	<i>11/07/14 18:07</i>	
<i>Surrogate: Toluene-d8</i>	<i>90.1 %</i>	<i>61 - 124</i>		B4K0129	11/07/2014	<i>11/07/14 13:40</i>	
<i>Surrogate: Toluene-d8</i>	<i>82.9 %</i>	<i>61 - 124</i>		B4K0129	11/07/2014	<i>11/07/14 18:07</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID EW-0100

Lab ID: 1403384-04

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	920	20	10	B4K0122	11/07/2014	11/11/14 09:23	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>39.8 %</i>	<i>42 - 106</i>		B4K0122	11/07/2014	<i>11/11/14 09:23</i>	S10
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>47.8 %</i>	<i>55 - 117</i>		B4K0122	11/07/2014	<i>11/11/14 09:23</i>	S10
<i>Surrogate: 4-Terphenyl-d14</i>	<i>59.2 %</i>	<i>52 - 142</i>		B4K0122	11/07/2014	<i>11/11/14 09:23</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>41.8 %</i>	<i>43 - 116</i>		B4K0122	11/07/2014	<i>11/11/14 09:23</i>	S10



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-32B

Lab ID: 1403384-05

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,1,1-Trichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,1,2-Trichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,1-Dichloroethane	0.87	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,1-Dichloroethene	110	5.0	10	B4K0129	11/07/2014	11/07/14 15:17	
1,1-Dichloropropene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,2,3-Trichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,2-Dibromoethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,2-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,2-Dichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,2-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,3-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,3-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
1,4-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
2,2-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
2-Chlorotoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
4-Chlorotoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
4-Isopropyltoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Benzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Bromobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Bromodichloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Bromoform	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Bromomethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Carbon tetrachloride	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Chlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Chloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Chloroform	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Chloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
cis-1,2-Dichloroethene	4.4	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Dibromochloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-32B

Lab ID: 1403384-05

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Dichlorodifluoromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Ethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Hexachlorobutadiene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Isopropylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
m,p-Xylene	ND	1.0	1	B4K0129	11/07/2014	11/07/14 14:53	
Methylene chloride	ND	1.0	1	B4K0129	11/07/2014	11/07/14 14:53	
n-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
n-Propylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Naphthalene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
o-Xylene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
sec-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Styrene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
tert-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Tetrachloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Toluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Trichloroethene	54	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Trichlorofluoromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
Vinyl chloride	ND	0.50	1	B4K0129	11/07/2014	11/07/14 14:53	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>90.9 %</i>	<i>64 - 146</i>		B4K0129	11/07/2014	<i>11/07/14 15:17</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>89.7 %</i>	<i>64 - 146</i>		B4K0129	11/07/2014	<i>11/07/14 14:53</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>89.9 %</i>	<i>60 - 128</i>		B4K0129	11/07/2014	<i>11/07/14 15:17</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>89.2 %</i>	<i>60 - 128</i>		B4K0129	11/07/2014	<i>11/07/14 14:53</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>91.6 %</i>	<i>72 - 141</i>		B4K0129	11/07/2014	<i>11/07/14 14:53</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>90.4 %</i>	<i>72 - 141</i>		B4K0129	11/07/2014	<i>11/07/14 15:17</i>	
<i>Surrogate: Toluene-d8</i>	<i>83.3 %</i>	<i>61 - 124</i>		B4K0129	11/07/2014	<i>11/07/14 15:17</i>	
<i>Surrogate: Toluene-d8</i>	<i>78.6 %</i>	<i>61 - 124</i>		B4K0129	11/07/2014	<i>11/07/14 14:53</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-32B

Lab ID: 1403384-05

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	4.5	0.20	1	B4K0150	11/07/2014	11/07/14 19:51	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>70.7 %</i>	<i>47 - 117</i>		B4K0150	11/07/2014	<i>11/07/14 19:51</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>93.6 %</i>	<i>48 - 121</i>		B4K0150	11/07/2014	<i>11/07/14 19:51</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>104 %</i>	<i>58 - 142</i>		B4K0150	11/07/2014	<i>11/07/14 19:51</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>79.1 %</i>	<i>27 - 151</i>		B4K0150	11/07/2014	<i>11/07/14 19:51</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW 36

Lab ID: 1403384-06

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,1,1-Trichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,1,2-Trichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,1-Dichloroethane	1.4	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,1-Dichloroethene	140	5.0	10	B4K0129	11/07/2014	11/07/14 16:05	
1,1-Dichloropropene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,2,3-Trichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,2-Dibromoethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,2-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,2-Dichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,2-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,3-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,3-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
1,4-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
2,2-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
2-Chlorotoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
4-Chlorotoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
4-Isopropyltoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Benzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Bromobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Bromodichloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Bromoform	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Bromomethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Carbon tetrachloride	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Chlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Chloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Chloroform	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Chloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Dibromochloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW 36

Lab ID: 1403384-06

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Dichlorodifluoromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Ethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Hexachlorobutadiene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Isopropylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
m,p-Xylene	ND	1.0	1	B4K0129	11/07/2014	11/07/14 15:41	
Methylene chloride	ND	1.0	1	B4K0129	11/07/2014	11/07/14 15:41	
n-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
n-Propylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Naphthalene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
o-Xylene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
sec-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Styrene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
tert-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Tetrachloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Toluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Trichloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Trichlorofluoromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Vinyl chloride	ND	0.50	1	B4K0129	11/07/2014	11/07/14 15:41	
Surrogate: 1,2-Dichloroethane-d4	88.6 %	64 - 146		B4K0129	11/07/2014	11/07/14 16:05	
Surrogate: 1,2-Dichloroethane-d4	94.1 %	64 - 146		B4K0129	11/07/2014	11/07/14 15:41	
Surrogate: 4-Bromofluorobenzene	90.4 %	60 - 128		B4K0129	11/07/2014	11/07/14 16:05	
Surrogate: 4-Bromofluorobenzene	91.0 %	60 - 128		B4K0129	11/07/2014	11/07/14 15:41	
Surrogate: Dibromofluoromethane	90.5 %	72 - 141		B4K0129	11/07/2014	11/07/14 15:41	
Surrogate: Dibromofluoromethane	86.8 %	72 - 141		B4K0129	11/07/2014	11/07/14 16:05	
Surrogate: Toluene-d8	84.2 %	61 - 124		B4K0129	11/07/2014	11/07/14 15:41	
Surrogate: Toluene-d8	81.7 %	61 - 124		B4K0129	11/07/2014	11/07/14 16:05	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW 36

Lab ID: 1403384-06

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	8.2	2.0	1	B4K0122	11/07/2014	11/10/14 14:35	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>55.2 %</i>	<i>42 - 106</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/10/14 14:35</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>71.6 %</i>	<i>55 - 117</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/10/14 14:35</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>98.8 %</i>	<i>52 - 142</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/10/14 14:35</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>64.6 %</i>	<i>43 - 116</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/10/14 14:35</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW 33

Lab ID: 1403384-07

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,1,1-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,1,2-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,1-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,1-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,1-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,2,3-Trichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,2-Dibromoethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,2-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,2-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,3-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,3-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
1,4-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
2,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
2-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
4-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
4-Isopropyltoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Benzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Bromobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Bromodichloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Bromoform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Bromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Carbon tetrachloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Chlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Chloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Chloroform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Chloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Dibromochloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW 33

Lab ID: 1403384-07

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Dichlorodifluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Ethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Hexachlorobutadiene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Isopropylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
m,p-Xylene	ND	1.0	1	B4K0156	11/07/2014	11/07/14 19:51	
Methylene chloride	ND	1.0	1	B4K0156	11/07/2014	11/07/14 19:51	
n-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
n-Propylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Naphthalene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
o-Xylene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
sec-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Styrene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
tert-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Tetrachloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Toluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Trichloroethene	1.1	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Trichlorofluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
Vinyl chloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:51	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>125 %</i>	<i>64 - 146</i>		B4K0156	11/07/2014	<i>11/07/14 19:51</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>109 %</i>	<i>60 - 128</i>		B4K0156	11/07/2014	<i>11/07/14 19:51</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>124 %</i>	<i>72 - 141</i>		B4K0156	11/07/2014	<i>11/07/14 19:51</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 124</i>		B4K0156	11/07/2014	<i>11/07/14 19:51</i>	



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Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW 33

Lab ID: 1403384-07

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B4K0150	11/07/2014	11/07/14 20:18	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>64.8 %</i>	<i>47 - 117</i>		B4K0150	11/07/2014	<i>11/07/14 20:18</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>81.4 %</i>	<i>48 - 121</i>		B4K0150	11/07/2014	<i>11/07/14 20:18</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>96.9 %</i>	<i>58 - 142</i>		B4K0150	11/07/2014	<i>11/07/14 20:18</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>71.4 %</i>	<i>27 - 151</i>		B4K0150	11/07/2014	<i>11/07/14 20:18</i>	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-41

Lab ID: 1403384-08

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,1,1-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,1,2-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,1-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,1-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,1-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,2,3-Trichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,2-Dibromoethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,2-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,2-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,3-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,3-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
1,4-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
2,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
2-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
4-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
4-Isopropyltoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Benzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Bromobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Bromodichloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Bromoform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Bromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Carbon tetrachloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Chlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Chloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Chloroform	0.72	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Chloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Dibromochloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-41

Lab ID: 1403384-08

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Dichlorodifluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Ethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Hexachlorobutadiene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Isopropylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
m,p-Xylene	ND	1.0	1	B4K0156	11/07/2014	11/07/14 20:14	
Methylene chloride	ND	1.0	1	B4K0156	11/07/2014	11/07/14 20:14	
n-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
n-Propylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Naphthalene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
o-Xylene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
sec-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Styrene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
tert-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Tetrachloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Toluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Trichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Trichlorofluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Vinyl chloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:14	
Surrogate: 1,2-Dichloroethane-d4	127 %	64 - 146		B4K0156	11/07/2014	11/07/14 20:14	
Surrogate: 4-Bromofluorobenzene	111 %	60 - 128		B4K0156	11/07/2014	11/07/14 20:14	
Surrogate: Dibromofluoromethane	125 %	72 - 141		B4K0156	11/07/2014	11/07/14 20:14	
Surrogate: Toluene-d8	101 %	61 - 124		B4K0156	11/07/2014	11/07/14 20:14	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-41

Lab ID: 1403384-08

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B4K0150	11/07/2014	11/07/14 20:44	
Surrogate: 1,2-Dichlorobenzene-d4	66.9 %	47 - 117		B4K0150	11/07/2014	11/07/14 20:44	
Surrogate: 2-Fluorobiphenyl	89.5 %	48 - 121		B4K0150	11/07/2014	11/07/14 20:44	
Surrogate: 4-Terphenyl-d14	108 %	58 - 142		B4K0150	11/07/2014	11/07/14 20:44	
Surrogate: Nitrobenzene-d5	73.6 %	27 - 151		B4K0150	11/07/2014	11/07/14 20:44	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-38

Lab ID: 1403384-09

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,1,1-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,1,2-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,1-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,1-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,1-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,2,3-Trichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,2-Dibromoethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,2-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,2-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,3-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,3-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
1,4-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
2,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
2-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
4-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
4-Isopropyltoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Benzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Bromobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Bromodichloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Bromoform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Bromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Carbon tetrachloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Chlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Chloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Chloroform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Chloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Dibromochloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-38

Lab ID: 1403384-09

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Dichlorodifluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Ethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Hexachlorobutadiene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Isopropylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
m,p-Xylene	ND	1.0	1	B4K0156	11/07/2014	11/07/14 20:36	
Methylene chloride	ND	1.0	1	B4K0156	11/07/2014	11/07/14 20:36	
n-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
n-Propylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Naphthalene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
o-Xylene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
sec-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Styrene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
tert-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Tetrachloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Toluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Trichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Trichlorofluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Vinyl chloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:36	
Surrogate: 1,2-Dichloroethane-d4	110 %	64 - 146		B4K0156	11/07/2014	11/07/14 20:36	
Surrogate: 4-Bromofluorobenzene	97.6 %	60 - 128		B4K0156	11/07/2014	11/07/14 20:36	
Surrogate: Dibromofluoromethane	110 %	72 - 141		B4K0156	11/07/2014	11/07/14 20:36	
Surrogate: Toluene-d8	90.8 %	61 - 124		B4K0156	11/07/2014	11/07/14 20:36	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-38

Lab ID: 1403384-09

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B4K0150	11/07/2014	11/07/14 21:11	
Surrogate: 1,2-Dichlorobenzene-d4	68.5 %	47 - 117		B4K0150	11/07/2014	11/07/14 21:11	
Surrogate: 2-Fluorobiphenyl	86.6 %	48 - 121		B4K0150	11/07/2014	11/07/14 21:11	
Surrogate: 4-Terphenyl-d14	100 %	58 - 142		B4K0150	11/07/2014	11/07/14 21:11	
Surrogate: Nitrobenzene-d5	78.1 %	27 - 151		B4K0150	11/07/2014	11/07/14 21:11	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-34B

Lab ID: 1403384-10

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,1,1-Trichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,1,2-Trichloroethane	0.97	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,1-Dichloroethane	2.2	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,1-Dichloroethene	210	5.0	10	B4K0129	11/07/2014	11/07/14 16:54	
1,1-Dichloropropene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,2,3-Trichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,2-Dibromoethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,2-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,2-Dichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,2-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,3-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,3-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
1,4-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
2,2-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
2-Chlorotoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
4-Chlorotoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
4-Isopropyltoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Benzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Bromobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Bromodichloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Bromoform	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Bromomethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Carbon tetrachloride	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Chlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Chloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Chloroform	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Chloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Dibromochloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-34B

Lab ID: 1403384-10

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Dichlorodifluoromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Ethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Hexachlorobutadiene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Isopropylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
m,p-Xylene	ND	1.0	1	B4K0129	11/07/2014	11/07/14 16:30	
Methylene chloride	ND	1.0	1	B4K0129	11/07/2014	11/07/14 16:30	
n-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
n-Propylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Naphthalene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
o-Xylene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
sec-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Styrene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
tert-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Tetrachloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Toluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Trichloroethene	0.66	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Trichlorofluoromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
Vinyl chloride	ND	0.50	1	B4K0129	11/07/2014	11/07/14 16:30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>91.2 %</i>	<i>64 - 146</i>		B4K0129	11/07/2014	<i>11/07/14 16:54</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.1 %</i>	<i>64 - 146</i>		B4K0129	11/07/2014	<i>11/07/14 16:30</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.0 %</i>	<i>60 - 128</i>		B4K0129	11/07/2014	<i>11/07/14 16:54</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.6 %</i>	<i>60 - 128</i>		B4K0129	11/07/2014	<i>11/07/14 16:30</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>95.1 %</i>	<i>72 - 141</i>		B4K0129	11/07/2014	<i>11/07/14 16:30</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>90.5 %</i>	<i>72 - 141</i>		B4K0129	11/07/2014	<i>11/07/14 16:54</i>	
<i>Surrogate: Toluene-d8</i>	<i>82.3 %</i>	<i>61 - 124</i>		B4K0129	11/07/2014	<i>11/07/14 16:54</i>	
<i>Surrogate: Toluene-d8</i>	<i>92.5 %</i>	<i>61 - 124</i>		B4K0129	11/07/2014	<i>11/07/14 16:30</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-34B

Lab ID: 1403384-10

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	57	2.0	1	B4K0122	11/07/2014	11/10/14 15:01	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>54.5 %</i>	<i>42 - 106</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/10/14 15:01</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>67.9 %</i>	<i>55 - 117</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/10/14 15:01</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>93.5 %</i>	<i>52 - 142</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/10/14 15:01</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>65.4 %</i>	<i>43 - 116</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/10/14 15:01</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-3400B

Lab ID: 1403384-11

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,1,1-Trichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,1,2-Trichloroethane	0.82	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,1-Dichloroethane	2.1	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,1-Dichloroethene	200	5.0	10	B4K0129	11/07/2014	11/07/14 17:43	
1,1-Dichloropropene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,2,3-Trichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,2-Dibromoethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,2-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,2-Dichloroethane	0.55	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,2-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,3-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,3-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
1,4-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
2,2-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
2-Chlorotoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
4-Chlorotoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
4-Isopropyltoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Benzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Bromobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Bromodichloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Bromoform	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Bromomethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Carbon tetrachloride	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Chlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Chloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Chloroform	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Chloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Dibromochloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-3400B

Lab ID: 1403384-11

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Dichlorodifluoromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Ethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Hexachlorobutadiene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Isopropylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
m,p-Xylene	ND	1.0	1	B4K0129	11/07/2014	11/07/14 17:18	
Methylene chloride	ND	1.0	1	B4K0129	11/07/2014	11/07/14 17:18	
n-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
n-Propylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Naphthalene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
o-Xylene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
sec-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Styrene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
tert-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Tetrachloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Toluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Trichloroethene	0.56	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Trichlorofluoromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
Vinyl chloride	ND	0.50	1	B4K0129	11/07/2014	11/07/14 17:18	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>88.5 %</i>	<i>64 - 146</i>		B4K0129	11/07/2014	<i>11/07/14 17:43</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.0 %</i>	<i>64 - 146</i>		B4K0129	11/07/2014	<i>11/07/14 17:18</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>88.2 %</i>	<i>60 - 128</i>		B4K0129	11/07/2014	<i>11/07/14 17:43</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.4 %</i>	<i>60 - 128</i>		B4K0129	11/07/2014	<i>11/07/14 17:18</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>88.6 %</i>	<i>72 - 141</i>		B4K0129	11/07/2014	<i>11/07/14 17:43</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>92.8 %</i>	<i>72 - 141</i>		B4K0129	11/07/2014	<i>11/07/14 17:18</i>	
<i>Surrogate: Toluene-d8</i>	<i>88.1 %</i>	<i>61 - 124</i>		B4K0129	11/07/2014	<i>11/07/14 17:18</i>	
<i>Surrogate: Toluene-d8</i>	<i>83.0 %</i>	<i>61 - 124</i>		B4K0129	11/07/2014	<i>11/07/14 17:43</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-3400B

Lab ID: 1403384-11

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	51	2.0	1	B4K0122	11/07/2014	11/10/14 15:27	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>66.2 %</i>	<i>42 - 106</i>		B4K0122	11/07/2014	<i>11/10/14 15:27</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>86.7 %</i>	<i>55 - 117</i>		B4K0122	11/07/2014	<i>11/10/14 15:27</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>116 %</i>	<i>52 - 142</i>		B4K0122	11/07/2014	<i>11/10/14 15:27</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>77.3 %</i>	<i>43 - 116</i>		B4K0122	11/07/2014	<i>11/10/14 15:27</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-30B

Lab ID: 1403384-12

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,1,1-Trichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,1,2-Trichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,1-Dichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,1-Dichloroethene	18	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,1-Dichloropropene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,2,3-Trichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,2-Dibromoethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,2-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,2-Dichloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,2-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,3-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,3-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
1,4-Dichlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
2,2-Dichloropropane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
2-Chlorotoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
4-Chlorotoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
4-Isopropyltoluene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Benzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Bromobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Bromodichloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Bromoform	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Bromomethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Carbon tetrachloride	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Chlorobenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Chloroethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Chloroform	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Chloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
cis-1,2-Dichloroethene	4.1	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Dibromochloromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-30B

Lab ID: 1403384-12

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Dichlorodifluoromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Ethylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Hexachlorobutadiene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Isopropylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
m,p-Xylene	ND	1.0	1	B4K0129	11/07/2014	11/07/14 11:40	
Methylene chloride	ND	1.0	1	B4K0129	11/07/2014	11/07/14 11:40	
n-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
n-Propylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Naphthalene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
o-Xylene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
sec-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Styrene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
tert-Butylbenzene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Tetrachloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Toluene	0.86	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Trichloroethene	81	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Trichlorofluoromethane	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
Vinyl chloride	ND	0.50	1	B4K0129	11/07/2014	11/07/14 11:40	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>87.7 %</i>	<i>64 - 146</i>		B4K0129	11/07/2014	<i>11/07/14 11:40</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.2 %</i>	<i>60 - 128</i>		B4K0129	11/07/2014	<i>11/07/14 11:40</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>88.0 %</i>	<i>72 - 141</i>		B4K0129	11/07/2014	<i>11/07/14 11:40</i>	
<i>Surrogate: Toluene-d8</i>	<i>80.3 %</i>	<i>61 - 124</i>		B4K0129	11/07/2014	<i>11/07/14 11:40</i>	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-30B

Lab ID: 1403384-12

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	0.54	0.20	1	B4K0150	11/07/2014	11/07/14 21:38	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>64.8 %</i>	<i>47 - 117</i>		B4K0150	11/07/2014	<i>11/07/14 21:38</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>79.1 %</i>	<i>48 - 121</i>		B4K0150	11/07/2014	<i>11/07/14 21:38</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>101 %</i>	<i>58 - 142</i>		B4K0150	11/07/2014	<i>11/07/14 21:38</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>73.4 %</i>	<i>27 - 151</i>		B4K0150	11/07/2014	<i>11/07/14 21:38</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-30A

Lab ID: 1403384-13

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,1,1-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,1,2-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,1-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,1-Dichloroethene	4.8	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,1-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,2,3-Trichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,2-Dibromoethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,2-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,2-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,3-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,3-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
1,4-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
2,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
2-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
4-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
4-Isopropyltoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Benzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Bromobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Bromodichloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Bromoform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Bromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Carbon tetrachloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Chlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Chloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Chloroform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Chloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Dibromochloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-30A

Lab ID: 1403384-13

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Dichlorodifluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Ethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Hexachlorobutadiene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Isopropylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
m,p-Xylene	ND	1.0	1	B4K0156	11/07/2014	11/07/14 20:58	
Methylene chloride	ND	1.0	1	B4K0156	11/07/2014	11/07/14 20:58	
n-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
n-Propylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Naphthalene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
o-Xylene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
sec-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Styrene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
tert-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Tetrachloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Toluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Trichloroethene	0.60	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Trichlorofluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
Vinyl chloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 20:58	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>108 %</i>	<i>64 - 146</i>		B4K0156	11/07/2014	<i>11/07/14 20:58</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.2 %</i>	<i>60 - 128</i>		B4K0156	11/07/2014	<i>11/07/14 20:58</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>	<i>72 - 141</i>		B4K0156	11/07/2014	<i>11/07/14 20:58</i>	
<i>Surrogate: Toluene-d8</i>	<i>88.9 %</i>	<i>61 - 124</i>		B4K0156	11/07/2014	<i>11/07/14 20:58</i>	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-30A

Lab ID: 1403384-13

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	1.9	0.20	1	B4K0150	11/07/2014	11/07/14 22:04	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>62.8 %</i>	<i>47 - 117</i>		B4K0150	11/07/2014	<i>11/07/14 22:04</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>78.5 %</i>	<i>48 - 121</i>		B4K0150	11/07/2014	<i>11/07/14 22:04</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>109 %</i>	<i>58 - 142</i>		B4K0150	11/07/2014	<i>11/07/14 22:04</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>72.3 %</i>	<i>27 - 151</i>		B4K0150	11/07/2014	<i>11/07/14 22:04</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-28

Lab ID: 1403384-14

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,1,1-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,1,2-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,1-Dichloroethane	0.50	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,1-Dichloroethene	43	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,1-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,2,3-Trichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,2-Dibromoethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,2-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,2-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,3-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,3-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
1,4-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
2,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
2-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
4-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
4-Isopropyltoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Benzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Bromobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Bromodichloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Bromoform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Bromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Carbon tetrachloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Chlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Chloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Chloroform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Chloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Dibromochloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-28

Lab ID: 1403384-14

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Dichlorodifluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Ethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Hexachlorobutadiene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Isopropylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
m,p-Xylene	ND	1.0	1	B4K0156	11/07/2014	11/07/14 21:20	
Methylene chloride	ND	1.0	1	B4K0156	11/07/2014	11/07/14 21:20	
n-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
n-Propylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Naphthalene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
o-Xylene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
sec-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Styrene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
tert-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Tetrachloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Toluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Trichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Trichlorofluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Vinyl chloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:20	
Surrogate: 1,2-Dichloroethane-d4	97.1 %	64 - 146		B4K0156	11/07/2014	11/07/14 21:20	
Surrogate: 4-Bromofluorobenzene	82.6 %	60 - 128		B4K0156	11/07/2014	11/07/14 21:20	
Surrogate: Dibromofluoromethane	96.5 %	72 - 141		B4K0156	11/07/2014	11/07/14 21:20	
Surrogate: Toluene-d8	76.4 %	61 - 124		B4K0156	11/07/2014	11/07/14 21:20	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Client Sample ID MW-28

Lab ID: 1403384-14

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	12	2.0	10	B4K0150	11/07/2014	11/11/14 12:32	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>66.8 %</i>	<i>47 - 117</i>		B4K0150	11/07/2014	<i>11/11/14 12:32</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>77.1 %</i>	<i>48 - 121</i>		B4K0150	11/07/2014	<i>11/11/14 12:32</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>111 %</i>	<i>58 - 142</i>		B4K0150	11/07/2014	<i>11/11/14 12:32</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>1.77 %</i>	<i>27 - 151</i>		B4K0150	11/07/2014	<i>11/11/14 12:32</i>	S10



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San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0129 - MSVOAW_LL

Blank (B4K0129-BLK1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,1,1,2-Tetrachloroethane	ND	0.50			NR			
1,1,1-Trichloroethane	ND	0.50			NR			
1,1,2,2-Tetrachloroethane	ND	0.50			NR			
1,1,2-Trichloroethane	ND	0.50			NR			
1,1-Dichloroethane	ND	0.50			NR			
1,1-Dichloroethene	ND	0.50			NR			
1,1-Dichloropropene	ND	0.50			NR			
1,2,3-Trichloropropane	ND	0.50			NR			
1,2,3-Trichlorobenzene	ND	0.50			NR			
1,2,4-Trichlorobenzene	ND	0.50			NR			
1,2,4-Trimethylbenzene	ND	0.50			NR			
1,2-Dibromo-3-chloropropane	ND	0.50			NR			
1,2-Dibromoethane	ND	0.50			NR			
1,2-Dichlorobenzene	ND	0.50			NR			
1,2-Dichloroethane	ND	0.50			NR			
1,2-Dichloropropane	ND	0.50			NR			
1,3,5-Trimethylbenzene	ND	0.50			NR			
1,3-Dichlorobenzene	ND	0.50			NR			
1,3-Dichloropropane	ND	0.50			NR			
1,4-Dichlorobenzene	ND	0.50			NR			
2,2-Dichloropropane	ND	0.50			NR			
2-Chlorotoluene	ND	0.50			NR			
4-Chlorotoluene	ND	0.50			NR			
4-Isopropyltoluene	ND	0.50			NR			
Benzene	ND	0.50			NR			
Bromobenzene	ND	0.50			NR			
Bromodichloromethane	ND	0.50			NR			
Bromoform	ND	0.50			NR			
Bromomethane	ND	0.50			NR			
Carbon tetrachloride	ND	0.50			NR			
Chlorobenzene	ND	0.50			NR			
Chloroethane	ND	0.50			NR			
Chloroform	ND	0.50			NR			
Chloromethane	ND	0.50			NR			
cis-1,2-Dichloroethene	ND	0.50			NR			
cis-1,3-Dichloropropene	ND	0.50			NR			
Dibromochloromethane	ND	0.50			NR			
Dibromomethane	ND	0.50			NR			
Dichlorodifluoromethane	ND	0.50			NR			



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Reported : 11/13/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0129 - MSVOAW_LL (continued)

Blank (B4K0129-BLK1) - Continued

Prepared: 11/7/2014 Analyzed: 11/7/2014

Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	22.48		25.0000		89.9	64 - 146			
Surrogate: 4-Bromofluorobenzene	24.53		25.0000		98.1	60 - 128			
Surrogate: Dibromofluoromethane	22.46		25.0000		89.8	72 - 141			
Surrogate: Toluene-d8	22.40		25.0000		89.6	61 - 124			

LCS (B4K0129-BS1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,1-Dichloroethene	23.6100	0.50	20.0000		118	56 - 131			
Benzene	43.5000	0.50	40.0000		109	69 - 139			
Chlorobenzene	20.6100	0.50	20.0000		103	73 - 127			
MTBE	22.8000	0.50	20.0000		114	68 - 133			
Toluene	43.0800	0.50	40.0000		108	62 - 133			
Trichloroethene	20.7400	0.50	20.0000		104	72 - 139			
Surrogate: 1,2-Dichloroethane-d4	20.43		25.0000		81.7	64 - 146			
Surrogate: 4-Bromofluorobenzene	22.15		25.0000		88.6	60 - 128			
Surrogate: Dibromofluoromethane	20.34		25.0000		81.4	72 - 141			
Surrogate: Toluene-d8	21.96		25.0000		87.8	61 - 124			

LCS Dup (B4K0129-BSD1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,1-Dichloroethene	24.4900	0.50	20.0000		122	56 - 131	3.66	20	
Benzene	42.7100	0.50	40.0000		107	69 - 139	1.83	20	
Chlorobenzene	20.6400	0.50	20.0000		103	73 - 127	0.145	20	
MTBE	21.5700	0.50	20.0000		108	68 - 133	5.54	20	
Toluene	41.9700	0.50	40.0000		105	62 - 133	2.61	20	



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0129 - MSVOAW_LL (continued)

LCS Dup (B4K0129-BS01) - Continued

Prepared: 11/7/2014 Analyzed: 11/7/2014

Trichloroethene	20.4600	0.50	20.0000		102	72 - 139	1.36	20	
Surrogate: 1,2-Dichloroethane-d4	18.94		25.0000		75.8	64 - 146			
Surrogate: 4-Bromofluorobenzene	22.47		25.0000		89.9	60 - 128			
Surrogate: Dibromofluoromethane	19.30		25.0000		77.2	72 - 141			
Surrogate: Toluene-d8	21.69		25.0000		86.8	61 - 124			

Matrix Spike (B4K0129-MS1)

Source: 1403384-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,1-Dichloroethene	806.200	10	400.000	345.600	115	56 - 131			
Benzene	874.600	10	800.000	ND	109	69 - 139			
Chlorobenzene	417.200	10	400.000	ND	104	73 - 127			
MTBE	464.200	10	400.000	ND	116	68 - 133			
Toluene	865.200	10	800.000	ND	108	62 - 133			
Trichloroethene	436.200	10	400.000	21.2000	104	72 - 139			
Surrogate: 1,2-Dichloroethane-d4	19.26		25.0000		77.0	64 - 146			
Surrogate: 4-Bromofluorobenzene	22.45		25.0000		89.8	60 - 128			
Surrogate: Dibromofluoromethane	19.05		25.0000		76.2	72 - 141			
Surrogate: Toluene-d8	21.82		25.0000		87.3	61 - 124			

Matrix Spike Dup (B4K0129-MSD1)

Source: 1403384-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,1-Dichloroethene	806.800	10	400.000	345.600	115	56 - 131	0.0744	20	
Benzene	880.600	10	800.000	ND	110	69 - 139	0.684	20	
Chlorobenzene	424.200	10	400.000	ND	106	73 - 127	1.66	20	
MTBE	432.200	10	400.000	ND	108	68 - 133	7.14	20	
Toluene	866.800	10	800.000	ND	108	62 - 133	0.185	20	
Trichloroethene	437.600	10	400.000	21.2000	104	72 - 139	0.320	20	
Surrogate: 1,2-Dichloroethane-d4	18.15		25.0000		72.6	64 - 146			
Surrogate: 4-Bromofluorobenzene	22.47		25.0000		89.9	60 - 128			
Surrogate: Dibromofluoromethane	18.90		25.0000		75.6	72 - 141			
Surrogate: Toluene-d8	21.54		25.0000		86.2	61 - 124			

Batch B4K0156 - MSVOAW_LL

Blank (B4K0156-BLK1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,1,1,2-Tetrachloroethane	ND	0.50			NR				
1,1,1-Trichloroethane	ND	0.50			NR				
1,1,2,2-Tetrachloroethane	ND	0.50			NR				
1,1,2-Trichloroethane	ND	0.50			NR				
1,1-Dichloroethane	ND	0.50			NR				
1,1-Dichloroethene	ND	0.50			NR				
1,1-Dichloropropene	ND	0.50			NR				
1,2,3-Trichloropropane	ND	0.50			NR				



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes

Batch B4K0156 - MSVOAW_LL (continued)

Blank (B4K0156-BLK1) - Continued

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,2,3-Trichlorobenzene	ND	0.50			NR
1,2,4-Trichlorobenzene	ND	0.50			NR
1,2,4-Trimethylbenzene	ND	0.50			NR
1,2-Dibromo-3-chloropropane	ND	0.50			NR
1,2-Dibromoethane	ND	0.50			NR
1,2-Dichlorobenzene	ND	0.50			NR
1,2-Dichloroethane	ND	0.50			NR
1,2-Dichloropropane	ND	0.50			NR
1,3,5-Trimethylbenzene	ND	0.50			NR
1,3-Dichlorobenzene	ND	0.50			NR
1,3-Dichloropropane	ND	0.50			NR
1,4-Dichlorobenzene	ND	0.50			NR
2,2-Dichloropropane	ND	0.50			NR
2-Chlorotoluene	ND	0.50			NR
4-Chlorotoluene	ND	0.50			NR
4-Isopropyltoluene	ND	0.50			NR
Benzene	ND	0.50			NR
Bromobenzene	ND	0.50			NR
Bromodichloromethane	ND	0.50			NR
Bromoform	ND	0.50			NR
Bromomethane	ND	0.50			NR
Carbon tetrachloride	ND	0.50			NR
Chlorobenzene	ND	0.50			NR
Chloroethane	ND	0.50			NR
Chloroform	ND	0.50			NR
Chloromethane	ND	0.50			NR
cis-1,2-Dichloroethene	ND	0.50			NR
cis-1,3-Dichloropropene	ND	0.50			NR
Dibromochloromethane	ND	0.50			NR
Dibromomethane	ND	0.50			NR
Dichlorodifluoromethane	ND	0.50			NR
Ethylbenzene	ND	0.50			NR
Hexachlorobutadiene	ND	0.50			NR
Isopropylbenzene	ND	0.50			NR
m,p-Xylene	ND	1.0			NR
Methylene chloride	ND	1.0			NR
n-Butylbenzene	ND	0.50			NR
n-Propylbenzene	ND	0.50			NR
Naphthalene	ND	0.50			NR
o-Xylene	ND	0.50			NR
sec-Butylbenzene	ND	0.50			NR
Styrene	ND	0.50			NR



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0156 - MSVOAW_LL (continued)

Blank (B4K0156-BLK1) - Continued

Prepared: 11/7/2014 Analyzed: 11/7/2014

tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				

Surrogate: 1,2-Dichloroethane-d4	26.63		25.0000		107	64 - 146			
Surrogate: 4-Bromofluorobenzene	24.41		25.0000		97.6	60 - 128			
Surrogate: Dibromofluoromethane	27.01		25.0000		108	72 - 141			
Surrogate: Toluene-d8	22.85		25.0000		91.4	61 - 124			

LCS (B4K0156-BS1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,1-Dichloroethene	20.9200	0.50	20.0000		105	56 - 131			
Benzene	36.3800	0.50	40.0000		91.0	69 - 139			
Chlorobenzene	18.4800	0.50	20.0000		92.4	73 - 127			
MTBE	16.6200	0.50	20.0000		83.1	68 - 133			
Toluene	33.8200	0.50	40.0000		84.6	62 - 133			
Trichloroethene	17.4700	0.50	20.0000		87.4	72 - 139			

Surrogate: 1,2-Dichloroethane-d4	27.76		25.0000		111	64 - 146			
Surrogate: 4-Bromofluorobenzene	25.12		25.0000		100	60 - 128			
Surrogate: Dibromofluoromethane	27.19		25.0000		109	72 - 141			
Surrogate: Toluene-d8	23.19		25.0000		92.8	61 - 124			

Matrix Spike (B4K0156-MS1)

Source: 1403402-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,1-Dichloroethene	20.9200	0.50	20.0000	ND	105	56 - 131			
Benzene	36.3800	0.50	40.0000	ND	91.0	69 - 139			
Chlorobenzene	18.4800	0.50	20.0000	ND	92.4	73 - 127			
MTBE	16.6200	0.50	20.0000	ND	83.1	68 - 133			
Toluene	33.8200	0.50	40.0000	0.640000	83.0	62 - 133			
Trichloroethene	17.4700	0.50	20.0000	ND	87.4	72 - 139			

Surrogate: 1,2-Dichloroethane-d4	27.76		25.0000		111	64 - 146			
Surrogate: 4-Bromofluorobenzene	25.12		25.0000		100	60 - 128			
Surrogate: Dibromofluoromethane	27.19		25.0000		109	72 - 141			
Surrogate: Toluene-d8	23.19		25.0000		92.8	61 - 124			

Matrix Spike Dup (B4K0156-MSD1)

Source: 1403402-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,1-Dichloroethene	22.9000	0.50	20.0000	ND	114	56 - 131	9.04	20	
Benzene	39.7600	0.50	40.0000	ND	99.4	69 - 139	8.88	20	
Chlorobenzene	20.3200	0.50	20.0000	ND	102	73 - 127	9.48	20	
MTBE	18.6700	0.50	20.0000	ND	93.4	68 - 133	11.6	20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0156 - MSVOAW_LL (continued)

Matrix Spike Dup (B4K0156-MSD1) - Continued

Source: 1403402-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

Toluene	37.4400	0.50	40.0000	0.640000	92.0	62 - 133	10.2	20	
Trichloroethene	19.4800	0.50	20.0000	ND	97.4	72 - 139	10.9	20	
Surrogate: 1,2-Dichloroethane-d4	26.67		25.0000		107	64 - 146			
Surrogate: 4-Bromofluorobenzene	25.56		25.0000		102	60 - 128			
Surrogate: Dibromofluoromethane	26.94		25.0000		108	72 - 141			
Surrogate: Toluene-d8	23.13		25.0000		92.5	61 - 124			



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

1,4-Dioxane by EPA 8270: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0122 - MSSEMI

Blank (B4K0122-BLK1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	65.31		100.000		65.3	42 - 106			
Surrogate: 2-Fluorobiphenyl	81.08		100.000		81.1	55 - 117			
Surrogate: 4-Terphenyl-d14	97.76		100.000		97.8	52 - 142			
Surrogate: Nitrobenzene-d5	89.84		100.000		89.8	43 - 116			

LCS (B4K0122-BS1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	102.770	2.0	100.000		103	62 - 127			
Surrogate: 1,2-Dichlorobenzene-d4	58.85		100.000		58.8	42 - 106			
Surrogate: 2-Fluorobiphenyl	80.33		100.000		80.3	55 - 117			
Surrogate: 4-Terphenyl-d14	93.31		100.000		93.3	52 - 142			
Surrogate: Nitrobenzene-d5	82.51		100.000		82.5	43 - 116			

Matrix Spike (B4K0122-MS1)

Source: 1403384-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	157.770	2.0	100.000	54.1800	104	62 - 127			
Surrogate: 1,2-Dichlorobenzene-d4	47.77		100.000		47.8	42 - 106			
Surrogate: 2-Fluorobiphenyl	65.11		100.000		65.1	55 - 117			
Surrogate: 4-Terphenyl-d14	82.43		100.000		82.4	52 - 142			
Surrogate: Nitrobenzene-d5	73.82		100.000		73.8	43 - 116			

Matrix Spike Dup (B4K0122-MSD1)

Source: 1403384-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	167.160	2.0	100.000	54.1800	113	62 - 127	5.78	20	
Surrogate: 1,2-Dichlorobenzene-d4	55.43		100.000		55.4	42 - 106			
Surrogate: 2-Fluorobiphenyl	77.85		100.000		77.8	55 - 117			
Surrogate: 4-Terphenyl-d14	88.70		100.000		88.7	52 - 142			
Surrogate: Nitrobenzene-d5	85.63		100.000		85.6	43 - 116			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0150 - MSSEMI_ISOTOPEDILN

Blank (B4K0150-BLK1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	ND	0.20		NR					
Surrogate: 1,2-Dichlorobenzene-d4	0.7243		1.00000		72.4	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8486		1.00000		84.9	48 - 121			
Surrogate: 4-Terphenyl-d14	1.118		1.00000		112	58 - 142			
Surrogate: Nitrobenzene-d5	0.7548		1.00000		75.5	27 - 151			

LCS (B4K0150-BS1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	1.48939	0.20	1.00000		149	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.8020		1.00000		80.2	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.9741		1.00000		97.4	48 - 121			
Surrogate: 4-Terphenyl-d14	1.128		1.00000		113	58 - 142			
Surrogate: Nitrobenzene-d5	0.8504		1.00000		85.0	27 - 151			

Matrix Spike (B4K0150-MS1)

Source: 1403402-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	1.38234	0.20	1.00000	ND	138	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.7426		1.00000		74.3	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.9297		1.00000		93.0	48 - 121			
Surrogate: 4-Terphenyl-d14	1.014		1.00000		101	58 - 142			
Surrogate: Nitrobenzene-d5	0.8270		1.00000		82.7	27 - 151			

Matrix Spike Dup (B4K0150-MSD1)

Source: 1403402-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	1.29151	0.20	1.00000	ND	129	58 - 151	6.79	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.6614		1.00000		66.1	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7975		1.00000		79.8	48 - 121			
Surrogate: 4-Terphenyl-d14	1.057		1.00000		106	58 - 142			
Surrogate: Nitrobenzene-d5	0.7094		1.00000		70.9	27 - 151			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/13/2014

Notes and Definitions

S10	Surrogate recovery outside of laboratory acceptance limit possibly due to matrix interference.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST FORM

DATE 11/14/14 PAGE 1 OF 2

PROJECT NAME <u>RAYTHEON MAIN</u>		PROJECT No./TASK No. <u>532.30</u>		SAMPLE CONTAINERS		ANALYSIS REQUESTED		ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S		SPECIAL HANDLING		LABORATORY INFORMATION					
PROJECT MANAGER <u>STEVE NETTO</u>		Phone No. <u>958.455.6520</u>		<u>40 mL VOA</u> <u>1 L Amber</u> <u>VOCs by 8260B</u> <u>1,4-Dioxane by 8270 SIM</u> <u>1,4-Dioxane by 8270 HQD</u>				<u>0-10</u> <u>10-100</u> <u>100-1,000</u> <u>>1,000</u>		<u>MS</u> <u>MSD</u>		<u>ATL</u> <u>atln:</u> <u>RACHELE ARADA</u>					
QA MANAGER		Fax No. <u>858.455.6533</u>															
SAMPLER (SIGNATURE) <u>[Signature]</u>		SAMPLER (PRINTED) <u>Cameron Berrington</u> <u>ELM HUNTER</u>															
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX		PRESERVATION											
		Date	Time	Soil	Ground - water	Surface water	LAB H ₂ O	HCl	HNO ₃	NaOH	H ₂ SO ₄	Ice					
	TB-110414A	11/4/14	1200			X	X			X							
	MW-21		1355	X		X				X							
	↓		↓	X						X							
	EW-01		1410	X		X				X							
	↓		↓	X						X							
	EW-0100		1610	X		X				X							
	↓		↓	X						X							
	MW-32B	11/5/14	1030	X		X				X							
	↓		↓	X						X							
	MW36		1351	X		X				X							
	↓		↓	X						X							
	MW33		1624	X		X				X							
				X						X							
Total number of Containers per analysis: <u>26</u>												Total No. of Containers: <u>34</u>					
Relinquished by: <u>[Signature]</u>		Date: <u>11/5/14</u>	Received by: <u>[Signature]</u>		Date: <u>11/5/14</u>	INSTRUCTIONS 1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness. 2. Complete in ballpoint pen. Draw one line through errors, initial and date correction. 3. Indicate number of sample containers in analysis request space; indicate choice with ✓ or x. 4. Note applicable preservatives, special instructions, and deviations from typical environmental samples. 5. Consult project QA documents for specific instructions.								Shipment Method: <u>COURIER</u>			
Company: <u>HHA</u>		Time: <u>1700</u>	Company: <u>ATL</u>		Time: <u>1700</u>									Send Results to: <u>Steve Netto</u>			
Relinquished by: <u>[Signature]</u>		Date: <u>11/9/14</u>	Received by: <u>[Signature]</u>		Date: <u>11/5/14</u>	Sample Receipt: ☐ No. of containers correct ☐ custody seals secure ☒ received good condition/cold ☐ conforms to COC document								☒ 9171 TOWNE CENTRE DRIVE, SUITE 375 SAN DIEGO, CA 92122 (858) 455-6500 ☐ 1640 SOUTH STAPLEY DRIVE, SUITE 209 MESA, AZ 85204 (480) 345-0888 ☐ 1820 EAST RIVER ROAD, SUITE 220 TUCSON, AZ 85718 (520) 881-7300			
Company: <u>ATL</u>		Time: <u>1755</u>	Company: <u>ATL</u>		Time: <u>1755</u>									Send invoice to San Diego, CA Attn: Accounts Payable			

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST FORM

DATE 11/5/14 PAGE 2 OF 2

PROJECT NAME		PROJECT No./TASK No.		SAMPLE CONTAINERS		ANALYSIS REQUESTED		ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S		SPECIAL HANDLING		LABORATORY INFORMATION							
RAYTHEON MAIN		532.30										ATL							
PROJECT MANAGER STEVE NETTO		Phone No. 858.455.6500										ath							
QA MANAGER		Fax No. 858.455.6533										RACHELE ARADA							
SAMPLER (SIGNATURE)		SAMPLER (PRINTED)																	
		Tylar Evans																	
STEVE STEWART																			
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX		PRESERVATION		40 ml VOA	1 L Amber	VOCs by EPA 8260B	1,4-Dioxane by 8270 SIM	1,4-Dioxane by 8270 MD	0-10	10-100	100-1,000	>1,000	MS	MSD	REMARKS
		Date	Time	Soil	Ground-water	Surface water	Lab 14610												
MW-41		11/5/14	10:04	X				X		X			X						
MW-41		11/5/14	10:04	X				X		X	X		X						
MW-38			10:52	X				X		X			X						
MW-38			10:52	X				X		X	X		X						
MW-34B			13:20	X				X		X					X				
MW-34B			13:20	X				X		X		X			X				
MW-3400B			13:30	X				X		X					X				
MW-3400B			13:30	X				X		X		X			X				
MW-30B			14:20	X				X		X			X						
MW-30B			14:20	X				X		X	X		X						
MW-30A			14:40	X				X		X			X						
MW-30A			14:40	X				X		X	X		X						
MW-28			15:30	X				X		X			X						
MW-28			15:30	X				X		X	X		X						
Total number of Containers per analysis:												Total No. of Containers: <u>28</u>							
Relinquished by:		Date	Received by:		Date	INSTRUCTIONS										Shipment Method: <u>COURIER</u>			
		11/5/14			11/5/14														
H+A		Time	ATL		Time	- Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness. - Complete in ballpoint pen. Draw one line through errors, initial and date correction. - Indicate number of sample containers in analysis request space; indicate choice with ✓ or x. - Note applicable preservatives, special instructions, and deviations from typical environmental samples. - Consult project QA documents for specific instructions.										Send Results to: <u>STEVE NETTO</u> ☒ 9171 TOWNE CENTRE DRIVE, SUITE 375 MESA, AZ 85204 (858) 455-0888 ☐ 1640 SOUTH STAPLEY DRIVE, SUITE 209 MESA, AZ 85204 (480) 345-0888 ☐ 1820 EAST RIVER ROAD, SUITE 220 TUCSON, AZ 85718 (520) 881-7300			
Company		1700	Company		1700														
Relinquished by:		Date	Received by:		Date	Sample Receipt: ☐ No. of containers correct ☒ received good condition/cold ☐ custody seals secure ☐ conforms to COC document										Send invoice to San Diego, CA Attn: Accounts Payable			
		11/5/14			11/5/14														
ATL		Time	ATL		Time														
Company		1755	Company		1755														



November 14, 2014

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1403402
Client Reference : RAYTHEON MAIN, 532.30

Enclosed are the results for sample(s) received on November 06, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read "E Rodriguez", is placed above the printed name.

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-110614	1403402-01	Lab H2O	11/06/14 8:00	11/06/14 16:30
MW-39	1403402-02	Groundwater	11/06/14 9:40	11/06/14 16:30
MW-37	1403402-03	Groundwater	11/06/14 11:50	11/06/14 16:30
MW-35C	1403402-04	Groundwater	11/06/14 15:00	11/06/14 16:30
MW-31	1403402-05	Groundwater	11/06/14 15:58	11/06/14 16:30
MW-40	1403402-06	Groundwater	11/06/14 11:05	11/06/14 16:30



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID TB-110614

Lab ID: 1403402-01

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,1,1-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,1,2-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,1-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,1-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,1-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,2,3-Trichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,2-Dibromoethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,2-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,2-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,3-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,3-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
1,4-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
2,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
2-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
4-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
4-Isopropyltoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Benzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Bromobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Bromodichloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Bromoform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Bromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Carbon tetrachloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Chlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Chloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Chloroform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Chloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Dibromochloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID TB-110614

Lab ID: 1403402-01

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Dichlorodifluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Ethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Hexachlorobutadiene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Isopropylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
m,p-Xylene	ND	1.0	1	B4K0156	11/07/2014	11/07/14 18:00	
Methylene chloride	ND	1.0	1	B4K0156	11/07/2014	11/07/14 18:00	
n-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
n-Propylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Naphthalene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
o-Xylene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
sec-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Styrene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
tert-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Tetrachloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Toluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Trichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Trichlorofluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Vinyl chloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:00	
Surrogate: 1,2-Dichloroethane-d4	113 %	64 - 146		B4K0156	11/07/2014	11/07/14 18:00	
Surrogate: 4-Bromofluorobenzene	98.8 %	60 - 128		B4K0156	11/07/2014	11/07/14 18:00	
Surrogate: Dibromofluoromethane	113 %	72 - 141		B4K0156	11/07/2014	11/07/14 18:00	
Surrogate: Toluene-d8	92.5 %	61 - 124		B4K0156	11/07/2014	11/07/14 18:00	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-39

Lab ID: 1403402-02

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,1,1-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,1,2-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,1-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,1-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,1-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,2,3-Trichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,2-Dibromoethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,2-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,2-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,3-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,3-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
1,4-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
2,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
2-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
4-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
4-Isopropyltoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Benzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Bromobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Bromodichloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Bromoform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Bromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Carbon tetrachloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Chlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Chloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Chloroform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Chloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Dibromochloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-39

Lab ID: 1403402-02

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Dichlorodifluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Ethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Hexachlorobutadiene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Isopropylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
m,p-Xylene	ND	1.0	1	B4K0156	11/07/2014	11/07/14 18:22	
Methylene chloride	ND	1.0	1	B4K0156	11/07/2014	11/07/14 18:22	
n-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
n-Propylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Naphthalene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
o-Xylene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
sec-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Styrene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
tert-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Tetrachloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Toluene	0.64	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Trichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Trichlorofluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
Vinyl chloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>110 %</i>	<i>64 - 146</i>		B4K0156	11/07/2014	<i>11/07/14 18:22</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.7 %</i>	<i>60 - 128</i>		B4K0156	11/07/2014	<i>11/07/14 18:22</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>113 %</i>	<i>72 - 141</i>		B4K0156	11/07/2014	<i>11/07/14 18:22</i>	
<i>Surrogate: Toluene-d8</i>	<i>90.2 %</i>	<i>61 - 124</i>		B4K0156	11/07/2014	<i>11/07/14 18:22</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-39

Lab ID: 1403402-02

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B4K0150	11/07/2014	11/07/14 22:57	
Surrogate: 1,2-Dichlorobenzene-d4	60.9 %	47 - 117		B4K0150	11/07/2014	11/07/14 22:57	
Surrogate: 2-Fluorobiphenyl	77.2 %	48 - 121		B4K0150	11/07/2014	11/07/14 22:57	
Surrogate: 4-Terphenyl-d14	103 %	58 - 142		B4K0150	11/07/2014	11/07/14 22:57	
Surrogate: Nitrobenzene-d5	71.6 %	27 - 151		B4K0150	11/07/2014	11/07/14 22:57	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-37

Lab ID: 1403402-03

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,1,1-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,1,2-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,1-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,1-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,1-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,2,3-Trichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,2-Dibromoethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,2-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,2-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,3-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,3-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
1,4-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
2,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
2-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
4-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
4-Isopropyltoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Benzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Bromobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Bromodichloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Bromoform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Bromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Carbon tetrachloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Chlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Chloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Chloroform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Chloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Dibromochloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-37

Lab ID: 1403402-03

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Dichlorodifluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Ethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Hexachlorobutadiene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Isopropylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
m,p-Xylene	ND	1.0	1	B4K0156	11/07/2014	11/07/14 18:45	
Methylene chloride	ND	1.0	1	B4K0156	11/07/2014	11/07/14 18:45	
n-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
n-Propylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Naphthalene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
o-Xylene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
sec-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Styrene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
tert-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Tetrachloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Toluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Trichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Trichlorofluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Vinyl chloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 18:45	
Surrogate: 1,2-Dichloroethane-d4	111 %	64 - 146		B4K0156	11/07/2014	11/07/14 18:45	
Surrogate: 4-Bromofluorobenzene	96.0 %	60 - 128		B4K0156	11/07/2014	11/07/14 18:45	
Surrogate: Dibromofluoromethane	112 %	72 - 141		B4K0156	11/07/2014	11/07/14 18:45	
Surrogate: Toluene-d8	91.8 %	61 - 124		B4K0156	11/07/2014	11/07/14 18:45	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-37

Lab ID: 1403402-03

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B4K0150	11/07/2014	11/07/14 23:24	
Surrogate: 1,2-Dichlorobenzene-d4	65.7 %	47 - 117		B4K0150	11/07/2014	11/07/14 23:24	
Surrogate: 2-Fluorobiphenyl	85.2 %	48 - 121		B4K0150	11/07/2014	11/07/14 23:24	
Surrogate: 4-Terphenyl-d14	108 %	58 - 142		B4K0150	11/07/2014	11/07/14 23:24	
Surrogate: Nitrobenzene-d5	72.3 %	27 - 151		B4K0150	11/07/2014	11/07/14 23:24	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-35C

Lab ID: 1403402-04

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,1,1-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,1,2-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,1-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,1-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,1-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,2,3-Trichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,2-Dibromoethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,2-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,2-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,3-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,3-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
1,4-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
2,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
2-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
4-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
4-Isopropyltoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Benzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Bromobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Bromodichloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Bromoform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Bromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Carbon tetrachloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Chlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Chloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Chloroform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Chloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Dibromochloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-35C

Lab ID: 1403402-04

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Dichlorodifluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Ethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Hexachlorobutadiene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Isopropylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
m,p-Xylene	ND	1.0	1	B4K0156	11/07/2014	11/07/14 19:07	
Methylene chloride	ND	1.0	1	B4K0156	11/07/2014	11/07/14 19:07	
n-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
n-Propylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Naphthalene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
o-Xylene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
sec-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Styrene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
tert-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Tetrachloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Toluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Trichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Trichlorofluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Vinyl chloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:07	
Surrogate: 1,2-Dichloroethane-d4	124 %	64 - 146		B4K0156	11/07/2014	11/07/14 19:07	
Surrogate: 4-Bromofluorobenzene	111 %	60 - 128		B4K0156	11/07/2014	11/07/14 19:07	
Surrogate: Dibromofluoromethane	122 %	72 - 141		B4K0156	11/07/2014	11/07/14 19:07	
Surrogate: Toluene-d8	103 %	61 - 124		B4K0156	11/07/2014	11/07/14 19:07	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-35C

Lab ID: 1403402-04

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B4K0150	11/07/2014	11/07/14 23:50	
Surrogate: 1,2-Dichlorobenzene-d4	71.6 %	47 - 117		B4K0150	11/07/2014	11/07/14 23:50	
Surrogate: 2-Fluorobiphenyl	85.3 %	48 - 121		B4K0150	11/07/2014	11/07/14 23:50	
Surrogate: 4-Terphenyl-d14	118 %	58 - 142		B4K0150	11/07/2014	11/07/14 23:50	
Surrogate: Nitrobenzene-d5	79.4 %	27 - 151		B4K0150	11/07/2014	11/07/14 23:50	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-31

Lab ID: 1403402-05

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,1,1-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,1,2-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,1-Dichloroethane	2.1	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,1-Dichloroethene	210	5.0	10	B4K0156	11/07/2014	11/07/14 22:05	
1,1-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,2,3-Trichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,2-Dibromoethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,2-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,2-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,3-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,3-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
1,4-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
2,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
2-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
4-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
4-Isopropyltoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Benzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Bromobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Bromodichloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Bromoform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Bromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Carbon tetrachloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Chlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Chloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Chloroform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Chloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Dibromochloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-31

Lab ID: 1403402-05

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Dichlorodifluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Ethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Hexachlorobutadiene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Isopropylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
m,p-Xylene	ND	1.0	1	B4K0156	11/07/2014	11/07/14 21:43	
Methylene chloride	ND	1.0	1	B4K0156	11/07/2014	11/07/14 21:43	
n-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
n-Propylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Naphthalene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
o-Xylene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
sec-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Styrene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
tert-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Tetrachloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Toluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Trichloroethene	9.1	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Trichlorofluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
Vinyl chloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 21:43	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>108 %</i>	<i>64 - 146</i>		B4K0156	11/07/2014	<i>11/07/14 22:05</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>125 %</i>	<i>64 - 146</i>		B4K0156	11/07/2014	<i>11/07/14 21:43</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.6 %</i>	<i>60 - 128</i>		B4K0156	11/07/2014	<i>11/07/14 22:05</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>110 %</i>	<i>60 - 128</i>		B4K0156	11/07/2014	<i>11/07/14 21:43</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>	<i>72 - 141</i>		B4K0156	11/07/2014	<i>11/07/14 22:05</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>125 %</i>	<i>72 - 141</i>		B4K0156	11/07/2014	<i>11/07/14 21:43</i>	
<i>Surrogate: Toluene-d8</i>	<i>90.4 %</i>	<i>61 - 124</i>		B4K0156	11/07/2014	<i>11/07/14 22:05</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>61 - 124</i>		B4K0156	11/07/2014	<i>11/07/14 21:43</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-31

Lab ID: 1403402-05

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	6.8	2.0	1	B4K0122	11/07/2014	11/10/14 15:54	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>53.4 %</i>	<i>42 - 106</i>		B4K0122	11/07/2014	<i>11/10/14 15:54</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>66.5 %</i>	<i>55 - 117</i>		B4K0122	11/07/2014	<i>11/10/14 15:54</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>82.2 %</i>	<i>52 - 142</i>		B4K0122	11/07/2014	<i>11/10/14 15:54</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>59.6 %</i>	<i>43 - 116</i>		B4K0122	11/07/2014	<i>11/10/14 15:54</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-40

Lab ID: 1403402-06

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,1,1-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,1,2-Trichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,1-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,1-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,1-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,2,3-Trichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,2-Dibromoethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,2-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,2-Dichloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,3-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,3-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
1,4-Dichlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
2,2-Dichloropropane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
2-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
4-Chlorotoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
4-Isopropyltoluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Benzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Bromobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Bromodichloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Bromoform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Bromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Carbon tetrachloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Chlorobenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Chloroethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Chloroform	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Chloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Dibromochloromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-40

Lab ID: 1403402-06

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Dichlorodifluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Ethylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Hexachlorobutadiene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Isopropylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
m,p-Xylene	ND	1.0	1	B4K0156	11/07/2014	11/07/14 19:29	
Methylene chloride	ND	1.0	1	B4K0156	11/07/2014	11/07/14 19:29	
n-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
n-Propylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Naphthalene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
o-Xylene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
sec-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Styrene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
tert-Butylbenzene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Tetrachloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Toluene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Trichloroethene	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Trichlorofluoromethane	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Vinyl chloride	ND	0.50	1	B4K0156	11/07/2014	11/07/14 19:29	
Surrogate: 1,2-Dichloroethane-d4	105 %	64 - 146		B4K0156	11/07/2014	11/07/14 19:29	
Surrogate: 4-Bromofluorobenzene	94.5 %	60 - 128		B4K0156	11/07/2014	11/07/14 19:29	
Surrogate: Dibromofluoromethane	107 %	72 - 141		B4K0156	11/07/2014	11/07/14 19:29	
Surrogate: Toluene-d8	86.4 %	61 - 124		B4K0156	11/07/2014	11/07/14 19:29	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-40

Lab ID: 1403402-06

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B4K0150	11/07/2014	11/08/14 00:17	
Surrogate: 1,2-Dichlorobenzene-d4	69.0 %	47 - 117		B4K0150	11/07/2014	11/08/14 00:17	
Surrogate: 2-Fluorobiphenyl	85.8 %	48 - 121		B4K0150	11/07/2014	11/08/14 00:17	
Surrogate: 4-Terphenyl-d14	107 %	58 - 142		B4K0150	11/07/2014	11/08/14 00:17	
Surrogate: Nitrobenzene-d5	77.3 %	27 - 151		B4K0150	11/07/2014	11/08/14 00:17	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0156 - MSVOA_LL_W

Blank (B4K0156-BLK1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,1,1,2-Tetrachloroethane	ND	0.50			NR			
1,1,1-Trichloroethane	ND	0.50			NR			
1,1,2,2-Tetrachloroethane	ND	0.50			NR			
1,1,2-Trichloroethane	ND	0.50			NR			
1,1-Dichloroethane	ND	0.50			NR			
1,1-Dichloroethene	ND	0.50			NR			
1,1-Dichloropropene	ND	0.50			NR			
1,2,3-Trichloropropane	ND	0.50			NR			
1,2,3-Trichlorobenzene	ND	0.50			NR			
1,2,4-Trichlorobenzene	ND	0.50			NR			
1,2,4-Trimethylbenzene	ND	0.50			NR			
1,2-Dibromo-3-chloropropane	ND	0.50			NR			
1,2-Dibromoethane	ND	0.50			NR			
1,2-Dichlorobenzene	ND	0.50			NR			
1,2-Dichloroethane	ND	0.50			NR			
1,2-Dichloropropane	ND	0.50			NR			
1,3,5-Trimethylbenzene	ND	0.50			NR			
1,3-Dichlorobenzene	ND	0.50			NR			
1,3-Dichloropropane	ND	0.50			NR			
1,4-Dichlorobenzene	ND	0.50			NR			
2,2-Dichloropropane	ND	0.50			NR			
2-Chlorotoluene	ND	0.50			NR			
4-Chlorotoluene	ND	0.50			NR			
4-Isopropyltoluene	ND	0.50			NR			
Benzene	ND	0.50			NR			
Bromobenzene	ND	0.50			NR			
Bromodichloromethane	ND	0.50			NR			
Bromoform	ND	0.50			NR			
Bromomethane	ND	0.50			NR			
Carbon tetrachloride	ND	0.50			NR			
Chlorobenzene	ND	0.50			NR			
Chloroethane	ND	0.50			NR			
Chloroform	ND	0.50			NR			
Chloromethane	ND	0.50			NR			
cis-1,2-Dichloroethene	ND	0.50			NR			
cis-1,3-Dichloropropene	ND	0.50			NR			
Dibromochloromethane	ND	0.50			NR			
Dibromomethane	ND	0.50			NR			
Dichlorodifluoromethane	ND	0.50			NR			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes

Batch B4K0156 - MSVOA_LL_W (continued)

Blank (B4K0156-BLK1) - Continued

Prepared: 11/7/2014 Analyzed: 11/7/2014

Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	26.63		25.0000		107	64 - 146			
Surrogate: 4-Bromofluorobenzene	24.41		25.0000		97.6	60 - 128			
Surrogate: Dibromofluoromethane	27.01		25.0000		108	72 - 141			
Surrogate: Toluene-d8	22.85		25.0000		91.4	61 - 124			

LCS (B4K0156-BS1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,1-Dichloroethene	20.9200	0.50	20.0000		105	56 - 131			
Benzene	36.3800	0.50	40.0000		91.0	69 - 139			
Chlorobenzene	18.4800	0.50	20.0000		92.4	73 - 127			
MTBE	16.6200	0.50	20.0000		83.1	68 - 133			
Toluene	33.8200	0.50	40.0000		84.6	62 - 133			
Trichloroethene	17.4700	0.50	20.0000		87.4	72 - 139			
Surrogate: 1,2-Dichloroethane-d4	27.76		25.0000		111	64 - 146			
Surrogate: 4-Bromofluorobenzene	25.12		25.0000		100	60 - 128			
Surrogate: Dibromofluoromethane	27.19		25.0000		109	72 - 141			
Surrogate: Toluene-d8	23.19		25.0000		92.8	61 - 124			

Matrix Spike (B4K0156-MS1)

Source: 1403402-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,1-Dichloroethene	20.9200	0.50	20.0000	ND	105	56 - 131			
Benzene	36.3800	0.50	40.0000	ND	91.0	69 - 139			
Chlorobenzene	18.4800	0.50	20.0000	ND	92.4	73 - 127			
MTBE	16.6200	0.50	20.0000	ND	83.1	68 - 133			
Toluene	33.8200	0.50	40.0000	0.640000	83.0	62 - 133			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0156 - MSVOA_LL_W (continued)

Matrix Spike (B4K0156-MS1) - Continued

Source: 1403402-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

Trichloroethene	17.4700	0.50	20.0000	ND	87.4	72 - 139			
Surrogate: 1,2-Dichloroethane-d4	27.76		25.0000		111	64 - 146			
Surrogate: 4-Bromofluorobenzene	25.12		25.0000		100	60 - 128			
Surrogate: Dibromofluoromethane	27.19		25.0000		109	72 - 141			
Surrogate: Toluene-d8	23.19		25.0000		92.8	61 - 124			

Matrix Spike Dup (B4K0156-MSD1)

Source: 1403402-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,1-Dichloroethene	22.9000	0.50	20.0000	ND	114	56 - 131	9.04	20	
Benzene	39.7600	0.50	40.0000	ND	99.4	69 - 139	8.88	20	
Chlorobenzene	20.3200	0.50	20.0000	ND	102	73 - 127	9.48	20	
MTBE	18.6700	0.50	20.0000	ND	93.4	68 - 133	11.6	20	
Toluene	37.4400	0.50	40.0000	0.640000	92.0	62 - 133	10.2	20	
Trichloroethene	19.4800	0.50	20.0000	ND	97.4	72 - 139	10.9	20	
Surrogate: 1,2-Dichloroethane-d4	26.67		25.0000		107	64 - 146			
Surrogate: 4-Bromofluorobenzene	25.56		25.0000		102	60 - 128			
Surrogate: Dibromofluoromethane	26.94		25.0000		108	72 - 141			
Surrogate: Toluene-d8	23.13		25.0000		92.5	61 - 124			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

1,4-Dioxane by EPA 8270: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0122 - z_MSSEMI

Blank (B4K0122-BLK1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	65.31		100.000		65.3	42 - 106			
Surrogate: 2-Fluorobiphenyl	81.08		100.000		81.1	55 - 117			
Surrogate: 4-Terphenyl-d14	97.76		100.000		97.8	52 - 142			
Surrogate: Nitrobenzene-d5	89.84		100.000		89.8	43 - 116			

LCS (B4K0122-BS1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	102.770	2.0	100.000		103	62 - 127			
Surrogate: 1,2-Dichlorobenzene-d4	58.85		100.000		58.8	42 - 106			
Surrogate: 2-Fluorobiphenyl	80.33		100.000		80.3	55 - 117			
Surrogate: 4-Terphenyl-d14	93.31		100.000		93.3	52 - 142			
Surrogate: Nitrobenzene-d5	82.51		100.000		82.5	43 - 116			

Matrix Spike (B4K0122-MS1)

Source: 1403384-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	157.770	2.0	100.000	54.1800	104	62 - 127			
Surrogate: 1,2-Dichlorobenzene-d4	47.77		100.000		47.8	42 - 106			
Surrogate: 2-Fluorobiphenyl	65.11		100.000		65.1	55 - 117			
Surrogate: 4-Terphenyl-d14	82.43		100.000		82.4	52 - 142			
Surrogate: Nitrobenzene-d5	73.82		100.000		73.8	43 - 116			

Matrix Spike Dup (B4K0122-MSD1)

Source: 1403384-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	167.160	2.0	100.000	54.1800	113	62 - 127	5.78	20	
Surrogate: 1,2-Dichlorobenzene-d4	55.43		100.000		55.4	42 - 106			
Surrogate: 2-Fluorobiphenyl	77.85		100.000		77.8	55 - 117			
Surrogate: 4-Terphenyl-d14	88.70		100.000		88.7	52 - 142			
Surrogate: Nitrobenzene-d5	85.63		100.000		85.6	43 - 116			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0150 - MSSEMI_ISOTOPEDILN

Blank (B4K0150-BLK1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	ND	0.20		NR					
Surrogate: 1,2-Dichlorobenzene-d4	0.7243		1.00000		72.4	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8486		1.00000		84.9	48 - 121			
Surrogate: 4-Terphenyl-d14	1.118		1.00000		112	58 - 142			
Surrogate: Nitrobenzene-d5	0.7548		1.00000		75.5	27 - 151			

LCS (B4K0150-BS1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	1.48939	0.20	1.00000		149	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.8020		1.00000		80.2	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.9741		1.00000		97.4	48 - 121			
Surrogate: 4-Terphenyl-d14	1.128		1.00000		113	58 - 142			
Surrogate: Nitrobenzene-d5	0.8504		1.00000		85.0	27 - 151			

Matrix Spike (B4K0150-MS1)

Source: 1403402-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	1.38234	0.20	1.00000	ND	138	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.7426		1.00000		74.3	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.9297		1.00000		93.0	48 - 121			
Surrogate: 4-Terphenyl-d14	1.014		1.00000		101	58 - 142			
Surrogate: Nitrobenzene-d5	0.8270		1.00000		82.7	27 - 151			

Matrix Spike Dup (B4K0150-MSD1)

Source: 1403402-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	1.29151	0.20	1.00000	ND	129	58 - 151	6.79	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.6614		1.00000		66.1	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7975		1.00000		79.8	48 - 121			
Surrogate: 4-Terphenyl-d14	1.057		1.00000		106	58 - 142			
Surrogate: Nitrobenzene-d5	0.7094		1.00000		70.9	27 - 151			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/14/2014

Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST FORM

DATE 11/6/14 PAGE 1 OF 1

PROJECT NAME <u>RANTHEON MAIN</u>		PROJECT No./TASK No. <u>532.30</u>		SAMPLE CONTAINERS		ANALYSIS REQUESTED		ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S		SPECIAL HANDLING		LABORATORY INFORMATION	
PROJECT MANAGER <u>STEVE NETTO</u>		Phone No. <u>858.455.6500</u>										ATL attn: RACHEL NEADA	
QA MANAGER		Fax No. <u>858.455.6533</u>											
SAMPLER (SIGNATURE) <u>[Signature]</u>		SAMPLER (PRINTED) <u>Cameron Berrington</u>											
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX		PRESERVATION							
		Date	Time	Soil	Ground - water	Surface water	Lab/Other	HCl	HNO ₃	NaOH	H ₂ SO ₄	Ice	
	TB-110014	11/6/14	0800				X	X				X	
	MW-39		0940	X			X					X	X
	↓		↓	X			X					X	X
	MW-37		1150	X			X					X	
	↓		↓	X			X					X	
	MW-35C		1500	X			X					X	
	↓		↓	X			X					X	
	MW-31		1558	X			X					X	
	↓		↓	X			X					X	
	MW-40		1105	X			X					X	
	↓		↓	X			X					X	
Total number of Containers per analysis:				13		7						Total No. of Containers: <u>(30)</u>	
Relinquished by: <u>[Signature]</u> Company		Date <u>11/6/14</u> Time <u>1630</u>	Received by: <u>[Signature]</u> Company		Date <u>11/6/14</u> Time <u>1630</u>	INSTRUCTIONS				Shipment Method: <u>CARRIER</u>			
Relinquished by: <u>[Signature]</u> Company		Date <u>11/6/14</u> Time <u>1730</u>	Received by: <u>[Signature]</u> Company		Date <u>11/6/14</u> Time <u>1730</u>	1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness. 2. Complete in ballpoint pen. Draw one line through errors, initial and date correction. 3. Indicate number of sample containers in analysis request space; indicate choice with ✓ or x. 4. Note applicable preservatives, special instructions, and deviations from typical environmental samples. 5. Consult project QA documents for specific instructions.				Send Results to: <u>STEVE NETTO</u>			
						Sample Receipt: ☐ No. of containers correct ☒ received good condition/cold ☐ custody seals secure ☐ conforms to COC document				9171 TOWNE CENTRE DRIVE, SUITE 375 SAN DIEGO, CA 92122 (858) 455-6500			
						Temp. @ receipt <u>15</u> °C				1640 SOUTH STAPLEY DRIVE, SUITE 209 MESA, AZ 85204 (480) 345-0888			
										1820 EAST RIVER ROAD, SUITE 220 TUCSON, AZ 85718 (520) 881-7300			
										Send invoice to San Diego, CA Attn: Accounts Payable			



November 19, 2014

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No.: T104704502

Re: ATL Work Order Number : 1403478
Client Reference : RAYTHEON MAIN, 532.30

Enclosed are the results for sample(s) received on November 12, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read "Eddie Rodriguez", with a small "ER" monogram to the left.

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/19/2014

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-26C	1403478-01	Groundwater	11/11/14 10:05	11/12/14 12:15
MW-08	1403478-02	Groundwater	11/11/14 11:30	11/12/14 12:15
TB-111114	1403478-03	Lab H2O	11/11/14 8:00	11/12/14 12:15



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/19/2014

Client Sample ID MW-26C

Lab ID: 1403478-01

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,1,1-Trichloroethane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,1,2-Trichloroethane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,1-Dichloroethane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,1-Dichloroethene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,1-Dichloropropene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,2,3-Trichloropropane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,2-Dibromoethane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,2-Dichlorobenzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,2-Dichloroethane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,2-Dichloropropane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,3-Dichlorobenzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,3-Dichloropropane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
1,4-Dichlorobenzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
2,2-Dichloropropane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
2-Chlorotoluene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
4-Chlorotoluene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
4-Isopropyltoluene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Benzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Bromobenzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Bromodichloromethane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Bromoform	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Bromomethane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Carbon tetrachloride	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Chlorobenzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Chloroethane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Chloroform	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Chloromethane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Dibromochloromethane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/19/2014

Client Sample ID MW-26C

Lab ID: 1403478-01

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Dichlorodifluoromethane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Ethylbenzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Hexachlorobutadiene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Isopropylbenzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
m,p-Xylene	ND	1.0	1	B4K0329	11/14/2014	11/14/14 15:01	
Methylene chloride	ND	1.0	1	B4K0329	11/14/2014	11/14/14 15:01	
n-Butylbenzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
n-Propylbenzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Naphthalene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
o-Xylene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
sec-Butylbenzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Styrene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
tert-Butylbenzene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Tetrachloroethene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Toluene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Trichloroethene	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Trichlorofluoromethane	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Vinyl chloride	ND	0.50	1	B4K0329	11/14/2014	11/14/14 15:01	
Surrogate: 1,2-Dichloroethane-d4	64.4 %	64 - 146		B4K0329	11/14/2014	11/14/14 15:01	
Surrogate: 4-Bromofluorobenzene	107 %	60 - 128		B4K0329	11/14/2014	11/14/14 15:01	
Surrogate: Dibromofluoromethane	72.6 %	72 - 141		B4K0329	11/14/2014	11/14/14 15:01	
Surrogate: Toluene-d8	71.2 %	61 - 124		B4K0329	11/14/2014	11/14/14 15:01	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/19/2014

Client Sample ID MW-26C

Lab ID: 1403478-01

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B4K0457	11/18/2014	11/18/14 19:49	
Surrogate: 1,2-Dichlorobenzene-d4	85.9 %	47 - 117		B4K0457	11/18/2014	11/18/14 19:49	
Surrogate: 2-Fluorobiphenyl	83.7 %	48 - 121		B4K0457	11/18/2014	11/18/14 19:49	
Surrogate: 4-Terphenyl-d14	101 %	58 - 142		B4K0457	11/18/2014	11/18/14 19:49	
Surrogate: Nitrobenzene-d5	75.7 %	27 - 151		B4K0457	11/18/2014	11/18/14 19:49	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/19/2014

Client Sample ID MW-08

Lab ID: 1403478-02

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,1,1-Trichloroethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,1,2-Trichloroethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,1-Dichloroethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,1-Dichloroethene	2.7	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,1-Dichloropropene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,2,3-Trichloropropane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,2-Dibromoethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,2-Dichlorobenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,2-Dichloroethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,2-Dichloropropane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,3-Dichlorobenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,3-Dichloropropane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
1,4-Dichlorobenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
2,2-Dichloropropane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
2-Chlorotoluene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
4-Chlorotoluene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
4-Isopropyltoluene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Benzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Bromobenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Bromodichloromethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Bromoform	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Bromomethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Carbon tetrachloride	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Chlorobenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Chloroethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Chloroform	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Chloromethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
cis-1,2-Dichloroethene	0.68	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Dibromochloromethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/19/2014

Client Sample ID MW-08

Lab ID: 1403478-02

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Dichlorodifluoromethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Ethylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Hexachlorobutadiene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Isopropylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
m,p-Xylene	ND	1.0	1	B4K0392	11/17/2014	11/17/14 11:09	
Methylene chloride	ND	1.0	1	B4K0392	11/17/2014	11/17/14 11:09	
n-Butylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
n-Propylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Naphthalene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
o-Xylene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
sec-Butylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Styrene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
tert-Butylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Tetrachloroethene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Toluene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Trichloroethene	13	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Trichlorofluoromethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
Vinyl chloride	ND	0.50	1	B4K0392	11/17/2014	11/17/14 11:09	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>93.6 %</i>	<i>64 - 146</i>		B4K0392	11/17/2014	<i>11/17/14 11:09</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>87.2 %</i>	<i>60 - 128</i>		B4K0392	11/17/2014	<i>11/17/14 11:09</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>93.5 %</i>	<i>72 - 141</i>		B4K0392	11/17/2014	<i>11/17/14 11:09</i>	
<i>Surrogate: Toluene-d8</i>	<i>88.2 %</i>	<i>61 - 124</i>		B4K0392	11/17/2014	<i>11/17/14 11:09</i>	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/19/2014

Client Sample ID MW-08

Lab ID: 1403478-02

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B4K0457	11/18/2014	11/18/14 20:15	
Surrogate: 1,2-Dichlorobenzene-d4	78.2 %	47 - 117		B4K0457	11/18/2014	11/18/14 20:15	
Surrogate: 2-Fluorobiphenyl	79.8 %	48 - 121		B4K0457	11/18/2014	11/18/14 20:15	
Surrogate: 4-Terphenyl-d14	90.3 %	58 - 142		B4K0457	11/18/2014	11/18/14 20:15	
Surrogate: Nitrobenzene-d5	69.8 %	27 - 151		B4K0457	11/18/2014	11/18/14 20:15	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/19/2014

Client Sample ID TB-111114

Lab ID: 1403478-03

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,1,1-Trichloroethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,1,2-Trichloroethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,1-Dichloroethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,1-Dichloroethene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,1-Dichloropropene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,2,3-Trichloropropane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,2,3-Trichlorobenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,2,4-Trichlorobenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,2,4-Trimethylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,2-Dibromoethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,2-Dichlorobenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,2-Dichloroethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,2-Dichloropropane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,3,5-Trimethylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,3-Dichlorobenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,3-Dichloropropane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
1,4-Dichlorobenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
2,2-Dichloropropane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
2-Chlorotoluene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
4-Chlorotoluene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
4-Isopropyltoluene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Benzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Bromobenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Bromodichloromethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Bromoform	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Bromomethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Carbon tetrachloride	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Chlorobenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Chloroethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Chloroform	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Chloromethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
cis-1,2-Dichloroethene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
cis-1,3-Dichloropropene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Dibromochloromethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/19/2014

Client Sample ID TB-111114

Lab ID: 1403478-03

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Dichlorodifluoromethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Ethylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Hexachlorobutadiene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Isopropylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
m,p-Xylene	ND	1.0	1	B4K0392	11/17/2014	11/17/14 10:44	
Methylene chloride	ND	1.0	1	B4K0392	11/17/2014	11/17/14 10:44	
n-Butylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
n-Propylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Naphthalene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
o-Xylene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
sec-Butylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Styrene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
tert-Butylbenzene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Tetrachloroethene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Toluene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
trans-1,2-Dichloroethene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Trichloroethene	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Trichlorofluoromethane	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Vinyl chloride	ND	0.50	1	B4K0392	11/17/2014	11/17/14 10:44	
Surrogate: 1,2-Dichloroethane-d4	99.7 %	64 - 146		B4K0392	11/17/2014	11/17/14 10:44	
Surrogate: 4-Bromofluorobenzene	92.1 %	60 - 128		B4K0392	11/17/2014	11/17/14 10:44	
Surrogate: Dibromofluoromethane	100 %	72 - 141		B4K0392	11/17/2014	11/17/14 10:44	
Surrogate: Toluene-d8	92.9 %	61 - 124		B4K0392	11/17/2014	11/17/14 10:44	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/19/2014

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0329 - MSVOA_LL_W

Blank (B4K0329-BLK1)

Prepared: 11/14/2014 Analyzed: 11/14/2014

1,1,1,2-Tetrachloroethane	ND	0.50			NR
1,1,1-Trichloroethane	ND	0.50			NR
1,1,2,2-Tetrachloroethane	ND	0.50			NR
1,1,2-Trichloroethane	ND	0.50			NR
1,1-Dichloroethane	ND	0.50			NR
1,1-Dichloroethene	ND	0.50			NR
1,1-Dichloropropene	ND	0.50			NR
1,2,3-Trichloropropane	ND	0.50			NR
1,2,3-Trichlorobenzene	ND	0.50			NR
1,2,4-Trichlorobenzene	ND	0.50			NR
1,2,4-Trimethylbenzene	ND	0.50			NR
1,2-Dibromo-3-chloropropane	ND	0.50			NR
1,2-Dibromoethane	ND	0.50			NR
1,2-Dichlorobenzene	ND	0.50			NR
1,2-Dichloroethane	ND	0.50			NR
1,2-Dichloropropane	ND	0.50			NR
1,3,5-Trimethylbenzene	ND	0.50			NR
1,3-Dichlorobenzene	ND	0.50			NR
1,3-Dichloropropane	ND	0.50			NR
1,4-Dichlorobenzene	ND	0.50			NR
2,2-Dichloropropane	ND	0.50			NR
2-Chlorotoluene	ND	0.50			NR
4-Chlorotoluene	ND	0.50			NR
4-Isopropyltoluene	ND	0.50			NR
Benzene	ND	0.50			NR
Bromobenzene	ND	0.50			NR
Bromodichloromethane	ND	0.50			NR
Bromoform	ND	0.50			NR
Bromomethane	ND	0.50			NR
Carbon tetrachloride	ND	0.50			NR
Chlorobenzene	ND	0.50			NR
Chloroethane	ND	0.50			NR
Chloroform	ND	0.50			NR
Chloromethane	ND	0.50			NR
cis-1,2-Dichloroethene	ND	0.50			NR
cis-1,3-Dichloropropene	ND	0.50			NR
Dibromochloromethane	ND	0.50			NR
Dibromomethane	ND	0.50			NR
Dichlorodifluoromethane	ND	0.50			NR



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/19/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes

Batch B4K0329 - MSVOA_LL_W (continued)

Blank (B4K0329-BLK1) - Continued

Prepared: 11/14/2014 Analyzed: 11/14/2014

Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	16.89		25.0000		67.6	64 - 146			
Surrogate: 4-Bromofluorobenzene	26.89		25.0000		108	60 - 128			
Surrogate: Dibromofluoromethane	19.57		25.0000		78.3	72 - 141			
Surrogate: Toluene-d8	19.14		25.0000		76.6	61 - 124			

LCS (B4K0329-BS1)

Prepared: 11/14/2014 Analyzed: 11/14/2014

1,1-Dichloroethene	21.5400		20.0000		108	56 - 131			
Benzene	39.0100		40.0000		97.5	69 - 139			
Chlorobenzene	19.6900		20.0000		98.4	73 - 127			
MTBE	23.1400		20.0000		116	68 - 133			
Toluene	37.6500		40.0000		94.1	62 - 133			
Trichloroethene	18.9300		20.0000		94.6	72 - 139			
Surrogate: 1,2-Dichloroethane-d4	16.73		25.0000		66.9	64 - 146			
Surrogate: 4-Bromofluorobenzene	24.32		25.0000		97.3	60 - 128			
Surrogate: Dibromofluoromethane	19.61		25.0000		78.4	72 - 141			
Surrogate: Toluene-d8	19.76		25.0000		79.0	61 - 124			

LCS Dup (B4K0329-BSD1)

Prepared: 11/14/2014 Analyzed: 11/14/2014

1,1-Dichloroethene	23.2500		20.0000		116	56 - 131	7.64	20	
Benzene	41.8900		40.0000		105	69 - 139	7.12	20	
Chlorobenzene	21.4600		20.0000		107	73 - 127	8.60	20	
MTBE	24.7600		20.0000		124	68 - 133	6.76	20	
Toluene	41.3800		40.0000		103	62 - 133	9.44	20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/19/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0329 - MSVOA_LL_W (continued)

LCS Dup (B4K0329-BSD1) - Continued

Prepared: 11/14/2014 Analyzed: 11/14/2014

Trichloroethene	20.6500		20.0000		103	72 - 139	8.69	20	
Surrogate: 1,2-Dichloroethane-d4	16.78		25.0000		67.1	64 - 146			
Surrogate: 4-Bromofluorobenzene	25.70		25.0000		103	60 - 128			
Surrogate: Dibromofluoromethane	19.32		25.0000		77.3	72 - 141			
Surrogate: Toluene-d8	20.23		25.0000		80.9	61 - 124			

Batch B4K0392 - MSVOA_LL_W

Blank (B4K0392-BLK1)

Prepared: 11/17/2014 Analyzed: 11/17/2014

1,1,1,2-Tetrachloroethane	ND	0.50		NR
1,1,1-Trichloroethane	ND	0.50		NR
1,1,2,2-Tetrachloroethane	ND	0.50		NR
1,1,2-Trichloroethane	ND	0.50		NR
1,1-Dichloroethane	ND	0.50		NR
1,1-Dichloroethene	ND	0.50		NR
1,1-Dichloropropene	ND	0.50		NR
1,2,3-Trichloropropane	ND	0.50		NR
1,2,3-Trichlorobenzene	ND	0.50		NR
1,2,4-Trichlorobenzene	ND	0.50		NR
1,2,4-Trimethylbenzene	ND	0.50		NR
1,2-Dibromo-3-chloropropane	ND	0.50		NR
1,2-Dibromoethane	ND	0.50		NR
1,2-Dichlorobenzene	ND	0.50		NR
1,2-Dichloroethane	ND	0.50		NR
1,2-Dichloropropane	ND	0.50		NR
1,3,5-Trimethylbenzene	ND	0.50		NR
1,3-Dichlorobenzene	ND	0.50		NR
1,3-Dichloropropane	ND	0.50		NR
1,4-Dichlorobenzene	ND	0.50		NR
2,2-Dichloropropane	ND	0.50		NR
2-Chlorotoluene	ND	0.50		NR
4-Chlorotoluene	ND	0.50		NR
4-Isopropyltoluene	ND	0.50		NR
Benzene	ND	0.50		NR
Bromobenzene	ND	0.50		NR
Bromodichloromethane	ND	0.50		NR
Bromoform	ND	0.50		NR
Bromomethane	ND	0.50		NR
Carbon tetrachloride	ND	0.50		NR
Chlorobenzene	ND	0.50		NR
Chloroethane	ND	0.50		NR



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/19/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes

Batch B4K0392 - MSVOA_LL_W (continued)

Blank (B4K0392-BLK1) - Continued

Prepared: 11/17/2014 Analyzed: 11/17/2014

Chloroform	ND	0.50			NR				
Chloromethane	ND	0.50			NR				
cis-1,2-Dichloroethene	ND	0.50			NR				
cis-1,3-Dichloropropene	ND	0.50			NR				
Dibromochloromethane	ND	0.50			NR				
Dibromomethane	ND	0.50			NR				
Dichlorodifluoromethane	ND	0.50			NR				
Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	24.35		25.0000		97.4	64 - 146			
Surrogate: 4-Bromofluorobenzene	24.11		25.0000		96.4	60 - 128			
Surrogate: Dibromofluoromethane	24.28		25.0000		97.1	72 - 141			
Surrogate: Toluene-d8	23.58		25.0000		94.3	61 - 124			

LCS (B4K0392-BS1)

Prepared: 11/17/2014 Analyzed: 11/17/2014

1,1-Dichloroethene	20.1700	0.50	20.0000		101	56 - 131			
Benzene	37.8600	0.50	40.0000		94.6	69 - 139			
Chlorobenzene	20.2400	0.50	20.0000		101	73 - 127			
MTBE	23.2700	0.50	20.0000		116	68 - 133			
Toluene	39.2800	0.50	40.0000		98.2	62 - 133			
Trichloroethene	18.7800	0.50	20.0000		93.9	72 - 139			
Surrogate: 1,2-Dichloroethane-d4	20.57		25.0000		82.3	64 - 146			
Surrogate: 4-Bromofluorobenzene	21.92		25.0000		87.7	60 - 128			
Surrogate: Dibromofluoromethane	20.06		25.0000		80.2	72 - 141			
Surrogate: Toluene-d8	22.09		25.0000		88.4	61 - 124			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/19/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0392 - MSVOA_LL_W (continued)

LCS Dup (B4K0392-BSD1)

Prepared: 11/17/2014 Analyzed: 11/17/2014

1,1-Dichloroethene	19.0200	0.50	20.0000		95.1	56 - 131	5.87	20	
Benzene	37.3900	0.50	40.0000		93.5	69 - 139	1.25	20	
Chlorobenzene	19.3200	0.50	20.0000		96.6	73 - 127	4.65	20	
MTBE	22.6700	0.50	20.0000		113	68 - 133	2.61	20	
Toluene	37.7700	0.50	40.0000		94.4	62 - 133	3.92	20	
Trichloroethene	18.3000	0.50	20.0000		91.5	72 - 139	2.59	20	

Surrogate: 1,2-Dichloroethane-d4	21.28		25.0000		85.1	64 - 146			
Surrogate: 4-Bromofluorobenzene	22.22		25.0000		88.9	60 - 128			
Surrogate: Dibromofluoromethane	21.41		25.0000		85.6	72 - 141			
Surrogate: Toluene-d8	22.28		25.0000		89.1	61 - 124			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

Reported : 11/19/2014

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0457 - MSSEMI_ISOTOPEDILN

Blank (B4K0457-BLK1)

Prepared: 11/18/2014 Analyzed: 11/18/2014

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.7630		1.00000		76.3	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8041		1.00000		80.4	48 - 121			
Surrogate: 4-Terphenyl-d14	1.007		1.00000		101	58 - 142			
Surrogate: Nitrobenzene-d5	0.7109		1.00000		71.1	27 - 151			

LCS (B4K0457-BS1)

Prepared: 11/18/2014 Analyzed: 11/18/2014

1,4-Dioxane	1.25765	0.20	1.00000		126	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.7896		1.00000		79.0	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8076		1.00000		80.8	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9266		1.00000		92.7	58 - 142			
Surrogate: Nitrobenzene-d5	0.7228		1.00000		72.3	27 - 151			

LCS Dup (B4K0457-BSD1)

Prepared: 11/18/2014 Analyzed: 11/18/2014

1,4-Dioxane	1.15937	0.20	1.00000		116	58 - 151	8.13	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.6194		1.00000		61.9	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.6956		1.00000		69.6	48 - 121			
Surrogate: 4-Terphenyl-d14	0.8779		1.00000		87.8	58 - 142			
Surrogate: Nitrobenzene-d5	0.5842		1.00000		58.4	27 - 151			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.30

Report To : Steve Netto

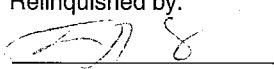
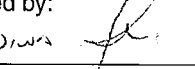
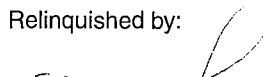
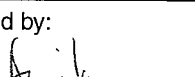
Reported : 11/19/2014

Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

PROJECT NAME		PROJECT No./TASK No.		SAMPLE CONTAINERS		ANALYSIS REQUESTED		ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S		SPECIAL HANDLING		LABORATORY INFORMATION			
RAYTHEDU MAIN		532.30										ATL attn: Rachelle Carada			
PROJECT MANAGER STEVE NETTO		Phone No. 938.455.6500													
QA MANAGER		Fax No. 938.455.6533													
SAMPLER (SIGNATURE)		SAMPLER (PRINTED)													
		Tyler Evans													
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX			PRESERVATION					REMARKS			
		Date	Time	Soil	Ground-water	Surface water	Lab H2O	HCl	HNO3	NaOH	H2SO4		Ice		
1403478-1	MW-26C	11-11-14	10:05	X			X								
	↓	↓	↓	X											
2	MW-08	11-11-14	11:30	X			X								
	↓	↓	↓	X											
3	TB-111114	11-11-14	0:00				X								
Total number of Containers per analysis: 9															
Total No. of Containers: 9															
Relinquished by:		Date	Received by:		Date	INSTRUCTIONS								Shipment Method: <u>CORPORAL</u>	
		11/12/14	FPDIMS 		11/12/14									Send Results to: <u>STEVE NETTO</u>	
Company		Time	Company		Time	1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness. 2. Complete in ballpoint pen. Draw one line through errors, initial and date correction. 3. Indicate number of sample containers in analysis request space; indicate choice with ✓ or x. 4. Note applicable preservatives, special instructions, and deviations from typical environmental samples. 5. Consult project QA documents for specific instructions.								☒ 9171 TOWNE CENTRE DRIVE, SUITE 375 SAN DIEGO, CA 92122 (858) 455-6500	
Relinquished by:		Date	Received by:		Date									☐ 1640 SOUTH STAPLEY DRIVE, SUITE 209 MESA, AZ 85204 (480) 345-0888	
		11/12/14	C. Aguila 		11/12/14	☐ 1820 EAST RIVER ROAD, SUITE 220 TUCSON, AZ 85718 (520) 881-7300									
Company		Time	Company		Time	Sample Receipt: ☐ No. of containers correct ☐ received good condition/cold ☐ custody seals secure ☐ conforms to COC document								Send invoice to San Diego, CA Attn: Accounts Payable	
AR		4:08	AR		4:08										



WORK ORDER NUMBER: 14-09-0747

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Hargis + Associates, Inc.

Client Project Name: Raytheon / 532.30

Attention: Steve Netto

9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

A handwritten signature in black ink, enclosed in an oval. The signature appears to read "Virendra R. Patel".

Approved for release on 09/16/2014 by:
Virendra Patel
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

Client Project Name: Raytheon / 532.30
 Work Order Number: 14-09-0747

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Work Order Narrative

Work Order: 14-09-0747Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 09/10/14. They were assigned to Work Order 14-09-0747.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Sample Summary

Client: Hargis + Associates, Inc.	Work Order: 14-09-0747
9171 Towne Centre Drive, Suite 375	Project Name: Raytheon / 532.30
San Diego, CA 92122-6215	PO Number:
	Date/Time Received: 09/10/14 16:45
	Number of Containers: 6

Attn: Steve Netto

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
TB-091014B	14-09-0747-1	09/10/14 08:00	2	Aqueous
MW-41	14-09-0747-2	09/10/14 14:15	4	Aqueous

Detections Summary

Client: Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Work Order: 14-09-0747
Project Name: Raytheon / 532.30
Received: 09/10/14

Attn: Steve Netto

Page 1 of 1

Client SampleID

<u>Analyte</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>Units</u>	<u>Method</u>	<u>Extraction</u>
MW-41 (14-09-0747-2) 1,1-Dichloroethene	1.8		1.0	ug/L	EPA 8260B	EPA 5030C

Subcontracted analyses, if any, are not included in this summary.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/10/14
 Work Order: 14-09-0747
 Preparation: EPA 3510C
 Method: EPA 8270C (M) Isotope Dilution
 Units: ug/L

Project: Raytheon / 532.30

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-41	14-09-0747-2-D	09/10/14 14:15	Aqueous	GC/MS DDD	09/12/14	09/12/14 20:34	140912L02

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,4-Dioxane	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Nitrobenzene-d5	97	56-123	
1,4-Dioxane-d8(IDS-IS)	45	30-120	

Method Blank	099-16-216-241	N/A	Aqueous	GC/MS DDD	09/12/14	09/12/14 13:48	140912L02

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,4-Dioxane	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Nitrobenzene-d5	104	56-123	
1,4-Dioxane-d8(IDS-IS)	48	30-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/10/14
 Work Order: 14-09-0747
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon / 532.30

Page 1 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
TB-091014B	14-09-0747-1-A	09/10/14 08:00	Aqueous	GC/MS JJ	09/12/14	09/12/14 18:50	140912L027

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/10/14
 Work Order: 14-09-0747
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	93	80-120	
Dibromofluoromethane	95	78-126	
1,2-Dichloroethane-d4	96	75-135	
Toluene-d8	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/10/14
 Work Order: 14-09-0747
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-41	14-09-0747-2-A	09/10/14 14:15	Aqueous	GC/MS JJ	09/12/14	09/12/14 21:16	140912L027

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	1.8	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/10/14
 Work Order: 14-09-0747
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	93	80-120	
Dibromofluoromethane	95	78-126	
1,2-Dichloroethane-d4	103	75-135	
Toluene-d8	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/10/14
 Work Order: 14-09-0747
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-001-15127	N/A	Aqueous	GC/MS JJ	09/12/14	09/12/14 14:28	140912L027

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/10/14
 Work Order: 14-09-0747
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	93	80-120	
Dibromofluoromethane	96	78-126	
1,2-Dichloroethane-d4	93	75-135	
Toluene-d8	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Quality Control - Spike/Spike Duplicate

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/10/14
 Work Order: 14-09-0747
 Preparation: EPA 3510C
 Method: EPA 8270C (M) Isotope Dilution

Project: Raytheon / 532.30

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-09-0916-1	Sample	Aqueous	GC/MS DDD	09/12/14	09/12/14 17:40	140912S02
14-09-0916-1	Matrix Spike	Aqueous	GC/MS DDD	09/12/14	09/12/14 17:56	140912S02
14-09-0916-1	Matrix Spike Duplicate	Aqueous	GC/MS DDD	09/12/14	09/12/14 18:11	140912S02

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
1,4-Dioxane	1.268	20.00	22.34	105	20.41	96	50-130	9	0-20	



Calscience

Quality Control - Spike/Spike Duplicate

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 09/10/14
Work Order: 14-09-0747
Preparation: EPA 5030C
Method: EPA 8260B

Project: Raytheon / 532.30

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-09-0762-1	Sample	Aqueous	GC/MS JJ	09/12/14	09/12/14 19:19	140912S021
14-09-0762-1	Matrix Spike	Aqueous	GC/MS JJ	09/12/14	09/12/14 17:23	140912S021
14-09-0762-1	Matrix Spike Duplicate	Aqueous	GC/MS JJ	09/12/14	09/12/14 17:52	140912S021

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	48.66	97	48.69	97	74-122	0	0-21	
Carbon Tetrachloride	ND	50.00	43.40	87	41.34	83	60-144	5	0-21	
Chlorobenzene	ND	50.00	51.56	103	50.84	102	73-120	1	0-22	
1,2-Dibromoethane	ND	50.00	49.46	99	49.40	99	80-122	0	0-20	
1,2-Dichlorobenzene	ND	50.00	51.89	104	52.32	105	70-120	1	0-26	
1,2-Dichloroethane	ND	50.00	45.47	91	45.19	90	64-142	1	0-20	
1,1-Dichloroethene	ND	50.00	42.14	84	40.42	81	52-136	4	0-21	
Ethylbenzene	ND	50.00	48.41	97	48.75	98	77-125	1	0-24	
Toluene	ND	50.00	48.35	97	48.39	97	72-126	0	0-23	
Trichloroethene	ND	50.00	49.41	99	48.42	97	74-128	2	0-22	
Vinyl Chloride	ND	50.00	44.21	88	43.51	87	67-133	2	0-20	
p/m-Xylene	ND	100.0	87.60	88	88.85	89	63-129	1	0-25	
o-Xylene	ND	50.00	46.79	94	47.50	95	62-128	2	0-24	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	45.62	91	45.84	92	68-134	0	0-21	

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RPD: Relative Percent Difference. CL: Control Limits

Quality Control - LCS

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/10/14
 Work Order: 14-09-0747
 Preparation: EPA 3510C
 Method: EPA 8270C (M) Isotope Dilution

Project: Raytheon / 532.30

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-216-241	LCS	Aqueous	GC/MS DDD	09/12/14	09/12/14 14:04	140912L02
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
1,4-Dioxane		20.00	20.69	103	50-130	

Quality Control - LCS

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 09/10/14
Work Order: 14-09-0747
Preparation: EPA 5030C
Method: EPA 8260B

Project: Raytheon / 532.30

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-001-15127	LCS	Aqueous	GC/MS JJ	09/12/14	09/12/14 12:31	140912L027
Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	47.36	95	80-120	73-127	
Carbon Tetrachloride	50.00	43.40	87	67-139	55-151	
Chlorobenzene	50.00	49.90	100	78-120	71-127	
1,2-Dibromoethane	50.00	47.75	96	80-120	73-127	
1,2-Dichlorobenzene	50.00	51.55	103	63-129	52-140	
1,2-Dichloroethane	50.00	43.67	87	70-130	60-140	
1,1-Dichloroethene	50.00	43.22	86	66-126	56-136	
Ethylbenzene	50.00	50.37	101	80-123	73-130	
Toluene	50.00	48.74	97	80-120	73-127	
Trichloroethene	50.00	47.36	95	80-122	73-129	
Vinyl Chloride	50.00	43.72	87	70-130	60-140	
p/m-Xylene	100.0	107.4	107	75-123	67-131	
o-Xylene	50.00	53.51	107	74-122	66-130	
Methyl-t-Butyl Ether (MTBE)	50.00	43.51	87	69-129	59-139	

Total number of LCS compounds: 14

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

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Sample Analysis Summary Report

Work Order: 14-09-0747

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<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA 8260B	EPA 5030C	799	GC/MS JJ	2
EPA 8270C (M) Isotope Dilution	EPA 3510C	907	GC/MS DDD	1


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Location 1: 7440 Lincoln Way, Garden Grove, CA 92841

Location 2: 7445 Lampson Avenue, Garden Grove, CA 92841

Glossary of Terms and Qualifiers

Work Order: 14-09-0747

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<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDS or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

[illegible]

Calscience

WORK ORDER #: 14-09-0747

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: HAGIS + Associates

DATE: 09/10/14

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 2.9 °C - 0.3 °C (CF) = 2.6 °C ☒ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 802

CUSTODY SEALS INTACT:
☐ Cooler ☐ _____

☐ No (Not Intact)

☒ Not Present

☐ N/A

Checked by: 802

☐ Sample ☐ _____

☐ No (Not Intact)

☒ Not Present

Checked by: 802

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	☒	☐	☐
COC document(s) received complete.....	☒	☐	☐

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.

☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.

Sampler's name indicated on COC.....	☒	☐	☐

Sample container label(s) consistent with COC.....	☒	☐	☐

Sample container(s) intact and good condition.....	☒	☐	☐

Proper containers and sufficient volume for analyses requested.....	☒	☐	☐

Analyses received within holding time.....	☒	☐	☐

Aqueous samples received within 15-minute holding time

☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen.....	☐	☐	☒

Proper preservation noted on COC or sample container.....	☒	☐	☐

☐ Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace.....	☒	☐	☐

Tedlar bag(s) free of condensation.....	☐	☐	☒

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® ☐ TerraCores® ☐ _____

Aqueous: ☐ VOA ☒ VOAh ☐ VOAna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☒ 1AGB ☐ 1AGBna₂ ☐ 1AGBs

☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 1PB ☐ 1PBna ☐ 500PB

☐ 250PB ☐ 250PBn ☐ 125PB ☐ 125PBznn ☐ 100PJ ☐ 100PJna₂ ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar® ☐ Canister Other: ☐ _____ Trip Blank Lot#: N/A Labeled/Checked by: 802

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 802

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure znn: ZnAc₂+NaOH f: Filtered Scanned by: 802



WORK ORDER NUMBER: 14-09-1917

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Hargis + Associates, Inc.

Client Project Name: Raytheon Main / 532.30

Attention: Steve Netto

9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

A handwritten signature in black ink, reading "Virendra R. Patel", enclosed in a hand-drawn oval.

Approved for release on 10/01/2014 by:
Virendra Patel
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

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 Work Order Number: 14-09-1917

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Work Order: 14-09-1917

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Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 09/24/14. They were assigned to Work Order 14-09-1917.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Sample Summary

Client:	Hargis + Associates, Inc.	Work Order:	14-09-1917
	9171 Towne Centre Drive, Suite 375	Project Name:	Raytheon Main / 532.30
	San Diego, CA 92122-6215	PO Number:	
		Date/Time Received:	09/24/14 14:30
		Number of Containers:	6

Attn: Steve Netto

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
TB-09242014B	14-09-1917-1	09/24/14 10:30	2	Aqueous
MW-41	14-09-1917-2	09/24/14 11:25	4	Aqueous

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/24/14
 Work Order: 14-09-1917
 Preparation: EPA 3510C
 Method: EPA 8270C (M) Isotope Dilution
 Units: ug/L

Project: Raytheon Main / 532.30

Page 1 of 1

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-41	14-09-1917-2-D	09/24/14 11:25	Aqueous	GC/MS DDD	09/25/14	09/25/14 17:18	140925L10

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,4-Dioxane	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Nitrobenzene-d5	112	56-123	
1,4-Dioxane-d8(IDS-IS)	44	30-120	

Method Blank	099-16-216-250	N/A	Aqueous	GC/MS DDD	09/25/14	09/25/14 16:47	140925L10

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,4-Dioxane	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Nitrobenzene-d5	118	56-123	
1,4-Dioxane-d8(IDS-IS)	51	30-120	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/24/14
 Work Order: 14-09-1917
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

Page 1 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
TB-09242014B	14-09-1917-1-A	09/24/14 10:30	Aqueous	GC/MS OO	09/25/14	09/25/14 20:23	140925L052

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/24/14
 Work Order: 14-09-1917
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

Page 2 of 6

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	97	80-120	
Dibromofluoromethane	101	78-126	
1,2-Dichloroethane-d4	108	75-135	
Toluene-d8	100	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/24/14
 Work Order: 14-09-1917
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-41	14-09-1917-2-A	09/24/14 11:25	Aqueous	GC/MS OO	09/25/14	09/25/14 21:45	140925L052

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/24/14
 Work Order: 14-09-1917
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

Page 4 of 6

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	97	80-120	
Dibromofluoromethane	102	78-126	
1,2-Dichloroethane-d4	110	75-135	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/24/14
 Work Order: 14-09-1917
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-001-15235	N/A	Aqueous	GC/MS OO	09/25/14	09/25/14 15:38	140925L052

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/24/14
 Work Order: 14-09-1917
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

Page 6 of 6

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	99	80-120	
Dibromofluoromethane	100	78-126	
1,2-Dichloroethane-d4	101	75-135	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - Spike/Spike Duplicate

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 09/24/14
Work Order: 14-09-1917
Preparation: EPA 3510C
Method: EPA 8270C (M) Isotope Dilution

Project: Raytheon Main / 532.30

Page 1 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number				
MW-41	Sample	Aqueous	GC/MS DDD	09/25/14	09/25/14 17:18	140925S10				
MW-41	Matrix Spike	Aqueous	GC/MS DDD	09/25/14	09/25/14 17:34	140925S10				
MW-41	Matrix Spike Duplicate	Aqueous	GC/MS DDD	09/25/14	09/25/14 17:50	140925S10				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
1,4-Dioxane	ND	20.00	19.20	96	18.38	92	50-130	4	0-20	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 09/24/14
Work Order: 14-09-1917
Preparation: EPA 5030C
Method: EPA 8260B

Project: Raytheon Main / 532.30

Page 2 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-09-1401-1	Sample	Aqueous	GC/MS OO	09/25/14	09/25/14 16:17	140925S007
14-09-1401-1	Matrix Spike	Aqueous	GC/MS OO	09/25/14	09/25/14 16:44	140925S007
14-09-1401-1	Matrix Spike Duplicate	Aqueous	GC/MS OO	09/25/14	09/25/14 17:12	140925S007

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Acetone	ND	50.00	57.51	115	55.81	112	40-140	3	0-20	
Benzene	ND	50.00	53.03	106	53.33	107	80-120	1	0-20	
Bromobenzene	ND	50.00	49.08	98	50.82	102	75-125	3	0-20	
Bromochloromethane	ND	50.00	54.23	108	54.08	108	65-135	0	0-20	
Bromodichloromethane	ND	50.00	55.19	110	55.57	111	75-120	1	0-20	
Bromoform	ND	50.00	50.63	101	50.92	102	70-130	1	0-20	
Bromomethane	ND	50.00	50.82	102	48.46	97	30-145	5	0-20	
2-Butanone	ND	50.00	53.92	108	56.95	114	30-150	5	0-20	
n-Butylbenzene	ND	50.00	53.69	107	54.34	109	70-135	1	0-20	
sec-Butylbenzene	ND	50.00	54.75	110	55.49	111	70-125	1	0-20	
tert-Butylbenzene	ND	50.00	54.55	109	56.32	113	70-130	3	0-20	
Carbon Disulfide	ND	50.00	47.91	96	49.11	98	35-160	2	0-20	
Carbon Tetrachloride	ND	50.00	54.24	108	53.78	108	65-140	1	0-20	
Chlorobenzene	ND	50.00	52.74	105	53.24	106	80-120	1	0-20	
Chloroethane	ND	50.00	57.01	114	55.62	111	60-135	2	0-20	
Chloroform	ND	50.00	53.36	107	53.82	108	65-135	1	0-20	
Chloromethane	ND	50.00	55.64	111	56.81	114	40-125	2	0-20	
2-Chlorotoluene	ND	50.00	53.79	108	56.05	112	75-125	4	0-20	
4-Chlorotoluene	ND	50.00	52.90	106	53.61	107	75-130	1	0-20	
Dibromochloromethane	ND	50.00	53.24	106	54.18	108	60-135	2	0-20	
1,2-Dibromo-3-Chloropropane	ND	50.00	51.59	103	53.39	107	50-130	3	0-20	
1,2-Dibromoethane	ND	50.00	53.41	107	55.29	111	80-120	3	0-20	
Dibromomethane	ND	50.00	53.39	107	54.99	110	75-125	3	0-20	
1,2-Dichlorobenzene	ND	50.00	52.74	105	53.02	106	70-120	1	0-20	
1,3-Dichlorobenzene	ND	50.00	52.53	105	53.17	106	75-125	1	0-20	
1,4-Dichlorobenzene	ND	50.00	49.76	100	49.80	100	75-125	0	0-20	
Dichlorodifluoromethane	ND	50.00	54.15	108	54.11	108	30-155	0	0-20	
1,1-Dichloroethane	ND	50.00	51.47	103	52.50	105	70-135	2	0-20	
1,2-Dichloroethane	ND	50.00	55.12	110	56.14	112	70-130	2	0-20	
1,1-Dichloroethene	ND	50.00	56.51	113	57.47	115	70-130	2	0-20	
c-1,2-Dichloroethene	ND	50.00	54.59	109	55.98	112	70-125	3	0-20	
t-1,2-Dichloroethene	ND	50.00	55.64	111	55.69	111	60-140	0	0-20	
1,2-Dichloropropane	ND	50.00	53.38	107	54.41	109	75-125	2	0-20	
1,3-Dichloropropane	ND	50.00	49.44	99	51.96	104	75-125	5	0-20	
2,2-Dichloropropane	ND	50.00	54.79	110	54.50	109	70-135	1	0-20	

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 09/24/14
Work Order: 14-09-1917
Preparation: EPA 5030C
Method: EPA 8260B

Project: Raytheon Main / 532.30

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Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
1,1-Dichloropropene	ND	50.00	56.33	113	55.23	110	75-130	2	0-20	
c-1,3-Dichloropropene	ND	50.00	58.87	118	59.68	119	70-130	1	0-20	
t-1,3-Dichloropropene	ND	50.00	56.26	113	56.44	113	55-140	0	0-20	
Ethylbenzene	ND	50.00	53.16	106	53.70	107	75-125	1	0-20	
2-Hexanone	ND	50.00	52.88	106	54.38	109	55-130	3	0-20	
Isopropylbenzene	ND	50.00	53.43	107	55.94	112	75-125	5	0-20	
p-Isopropyltoluene	ND	50.00	49.33	99	50.42	101	75-130	2	0-20	
Methylene Chloride	ND	50.00	53.02	106	53.94	108	55-140	2	0-20	
4-Methyl-2-Pentanone	ND	50.00	57.16	114	57.17	114	60-135	0	0-20	
Naphthalene	ND	50.00	49.62	99	51.54	103	55-140	4	0-20	
n-Propylbenzene	ND	50.00	52.68	105	55.88	112	70-130	6	0-20	
Styrene	ND	50.00	50.19	100	51.97	104	65-135	3	0-20	
1,1,1,2-Tetrachloroethane	ND	50.00	51.50	103	51.35	103	80-130	0	0-20	
1,1,2,2-Tetrachloroethane	ND	50.00	52.81	106	57.44	115	65-130	8	0-20	
Tetrachloroethene	ND	50.00	45.83	92	46.42	93	45-150	1	0-20	
Toluene	ND	50.00	51.95	104	52.41	105	75-120	1	0-20	
1,2,3-Trichlorobenzene	ND	50.00	49.15	98	49.60	99	55-140	1	0-20	
1,2,4-Trichlorobenzene	ND	50.00	50.79	102	50.97	102	65-135	0	0-20	
1,1,1-Trichloroethane	ND	50.00	53.53	107	54.14	108	65-130	1	0-20	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	50.00	52.48	105	53.38	107	80-130	2	0-20	
1,1,2-Trichloroethane	ND	50.00	51.25	102	51.61	103	75-125	1	0-20	
Trichloroethene	ND	50.00	47.01	94	47.68	95	70-125	1	0-20	
Trichlorofluoromethane	ND	50.00	56.69	113	54.87	110	60-145	3	0-20	
1,2,3-Trichloropropane	ND	50.00	49.37	99	51.54	103	75-125	4	0-20	
1,2,4-Trimethylbenzene	ND	50.00	52.59	105	53.41	107	75-130	2	0-20	
1,3,5-Trimethylbenzene	ND	50.00	53.07	106	54.75	109	75-130	3	0-20	
Vinyl Acetate	ND	50.00	62.31	125	65.23	130	80-120	5	0-20	3
Vinyl Chloride	ND	50.00	57.50	115	54.36	109	50-145	6	0-20	
p/m-Xylene	ND	100.0	109.2	109	110.6	111	75-130	1	0-20	
o-Xylene	ND	50.00	53.17	106	55.23	110	80-120	4	0-20	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	51.28	103	53.10	106	65-125	3	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

Quality Control - LCS

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/24/14
 Work Order: 14-09-1917
 Preparation: EPA 3510C
 Method: EPA 8270C (M) Isotope Dilution

Project: Raytheon Main / 532.30

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-216-250	LCS	Aqueous	GC/MS DDD	09/25/14	09/25/14 17:03	140925L10
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
1,4-Dioxane		20.00	18.39	92	50-130	

Quality Control - LCS

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 09/24/14
 Work Order: 14-09-1917
 Preparation: EPA 5030C
 Method: EPA 8260B

Project: Raytheon Main / 532.30

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-001-15235	LCS	Aqueous	GC/MS OO	09/25/14	09/25/14 14:38	140925L052
Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	52.87	106	80-120	73-127	
Carbon Tetrachloride	50.00	56.86	114	67-139	55-151	
Chlorobenzene	50.00	53.90	108	78-120	71-127	
1,2-Dibromoethane	50.00	52.22	104	80-120	73-127	
1,2-Dichlorobenzene	50.00	52.67	105	63-129	52-140	
1,2-Dichloroethane	50.00	54.55	109	70-130	60-140	
1,1-Dichloroethene	50.00	57.02	114	66-126	56-136	
Ethylbenzene	50.00	55.05	110	80-123	73-130	
Toluene	50.00	53.04	106	80-120	73-127	
Trichloroethene	50.00	47.40	95	80-122	73-129	
Vinyl Chloride	50.00	51.87	104	70-130	60-140	
p/m-Xylene	100.0	115.7	116	75-123	67-131	
o-Xylene	50.00	56.80	114	74-122	66-130	
Methyl-t-Butyl Ether (MTBE)	50.00	50.79	102	69-129	59-139	

Total number of LCS compounds: 14

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

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Sample Analysis Summary Report

Work Order: 14-09-1917

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<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA 8260B	EPA 5030C	849	GC/MS OO	2
EPA 8270C (M) Isotope Dilution	EPA 3510C	907	GC/MS DDD	1


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Location 1: 7440 Lincoln Way, Garden Grove, CA 92841

Location 2: 7445 Lampson Avenue, Garden Grove, CA 92841

Glossary of Terms and Qualifiers

Work Order: 14-09-1917

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<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDS or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Calscience

WORK ORDER #: 14-09-1917

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: Hargis + Assoc.

DATE: 09/24/14

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 5.0 °C - 0.3 °C (CF) = 4.7 °C ☐ Blank ☒ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by:)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 300

CUSTODY SEALS INTACT:

☐ Cooler ☐ No (Not Intact) ☒ Not Present ☐ N/A Checked by: 300

☐ Sample ☐ No (Not Intact) ☒ Not Present Checked by: 8m

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	☒	☐	☐
COC document(s) received complete.....	☒	☐	☐

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.

☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.

Sampler's name indicated on COC.....	☒	☐	☐

Sample container label(s) consistent with COC.....	☒	☐	☐

Sample container(s) intact and good condition.....	☒	☐	☐

Proper containers and sufficient volume for analyses requested.....	☒	☐	☐

Analyses received within holding time.....	☒	☐	☐

Aqueous samples received within 15-minute holding time

☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen..... ☐ ☐ ☒

Proper preservation noted on COC or sample container.....	☒	☐	☐

☐ Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace.....	☒	☐	☐

Tedlar bag(s) free of condensation.....	☐	☐	☒

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve () ☐ EnCores® ☐ TerraCores® ☐

Aqueous: ☐ VOA ☒ VOAH ☐ VOAna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☒ 1AGB ☐ 1AGBna₂ ☐ 1AGBs

☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 1PB ☐ 1PBna ☐ 500PB

☐ 250PB ☐ 250PBn ☐ 125PB ☐ 125PBznn ☐ 100PJ ☐ 100PJna₂ ☐ ☐ ☐

Air: ☐ Tedlar® ☐ Canister Other: ☐ Trip Blank Lot#: N/A Labeled/Checked by: 8m

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope Reviewed by: 778

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure znn: ZnAc₂+NaOH f: Filtered Scanned by: 778

**WORK ORDER NUMBER: 14-11-0405***The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For**Client:** Hargis + Associates, Inc.**Client Project Name:** Raytheon Main / 532.30**Attention:** Steve Netto9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

A handwritten signature in black ink, reading "Virendra Patel", enclosed in a simple oval border.

Approved for release on 11/13/2014 by:
Virendra Patel
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Contents

Client Project Name: Raytheon Main / 532.30
 Work Order Number: 14-11-0405

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Work Order Narrative

Work Order: 14-11-0405Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 11/05/14. They were assigned to Work Order 14-11-0405.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

New York NELAP air certification does not certify for all reported methods and analytes, reference the accredited items here: http://www.calscience.com/PDF/New_York.pdf

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Sample Summary

Client:	Hargis + Associates, Inc.	Work Order:	14-11-0405
	9171 Towne Centre Drive, Suite 375	Project Name:	Raytheon Main / 532.30
	San Diego, CA 92122-6215	PO Number:	
		Date/Time Received:	11/05/14 18:00
		Number of Containers:	10

Attn: Steve Netto

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
TB-110414B	14-11-0405-1	11/04/14 12:00	2	Aqueous
EW-01	14-11-0405-2	11/04/14 14:10	4	Aqueous
MW-34B	14-11-0405-3	11/05/14 13:20	4	Aqueous

Detections Summary

Client: Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Work Order: 14-11-0405
 Project Name: Raytheon Main / 532.30
 Received: 11/05/14

Attn: Steve Netto

Page 1 of 1

Client SampleID

<u>Analyte</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>Units</u>	<u>Method</u>	<u>Extraction</u>
EW-01 (14-11-0405-2)						
Carbon Tetrachloride	0.57		0.50	ug/L	EPA 8260B	EPA 5030C
Chloroform	1.2		1.0	ug/L	EPA 8260B	EPA 5030C
1,1-Dichloroethane	16		1.0	ug/L	EPA 8260B	EPA 5030C
1,2-Dichloroethane	3.6		0.50	ug/L	EPA 8260B	EPA 5030C
1,1-Dichloroethene	720		10	ug/L	EPA 8260B	EPA 5030C
Tetrachloroethene	2.3		1.0	ug/L	EPA 8260B	EPA 5030C
1,1,2-Trichloroethane	8.8		1.0	ug/L	EPA 8260B	EPA 5030C
Trichloroethene	2.7		1.0	ug/L	EPA 8260B	EPA 5030C
1,4-Dioxane	1800		50	ug/L	EPA 8270C (M) Isotope Dilution	EPA 3510C
MW-34B (14-11-0405-3)						
1,1-Dichloroethane	2.0		1.0	ug/L	EPA 8260B	EPA 5030C
1,1-Dichloroethene	180		1.0	ug/L	EPA 8260B	EPA 5030C
1,4-Dioxane	54		1.0	ug/L	EPA 8270C (M) Isotope Dilution	EPA 3510C

Subcontracted analyses, if any, are not included in this summary.

Return to Contents

* MDL is shown

Analytical Report

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 11/05/14
Work Order: 14-11-0405
Preparation: EPA 3510C
Method: EPA 8270C (M) Isotope Dilution
Units: ug/L

Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EW-01	14-11-0405-2-D	11/04/14 14:10	Aqueous	GC/MS DDD	11/07/14	11/10/14 18:35	141107L04

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,4-Dioxane	1800	50	50.0	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Nitrobenzene-d5	97	56-123	
1,4-Dioxane-d8(IDS-IS)	53	30-120	

MW-34B	14-11-0405-3-D	11/05/14 13:20	Aqueous	GC/MS DDD	11/07/14	11/08/14 16:29	141107L04

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,4-Dioxane	54	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Nitrobenzene-d5	80	56-123	
1,4-Dioxane-d8(IDS-IS)	64	30-120	

Method Blank	099-16-216-294	N/A	Aqueous	GC/MS DDD	11/07/14	11/08/14 15:11	141107L04

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,4-Dioxane	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Nitrobenzene-d5	90	56-123	
1,4-Dioxane-d8(IDS-IS)	67	30-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 11/05/14
 Work Order: 14-11-0405
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
TB-110414B	14-11-0405-1-A	11/04/14 12:00	Aqueous	GC/MS JJ	11/06/14	11/06/14 23:35	141106L013

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 11/05/14
 Work Order: 14-11-0405
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	94	80-120	
Dibromofluoromethane	113	78-126	
1,2-Dichloroethane-d4	112	75-135	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 11/05/14
 Work Order: 14-11-0405
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EW-01	14-11-0405-2-A	11/04/14 14:10	Aqueous	GC/MS JJ	11/06/14	11/07/14 00:03	141106L013

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	0.57	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	1.2	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	16	1.0	1.00	
1,2-Dichloroethane	3.6	0.50	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	
1,1-Dichloropropene	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 11/05/14
 Work Order: 14-11-0405
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	2.3	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	8.8	1.0	1.00	
Trichloroethene	2.7	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	93	80-120	
Dibromofluoromethane	113	78-126	
1,2-Dichloroethane-d4	116	75-135	
Toluene-d8	102	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 11/05/14
 Work Order: 14-11-0405
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
EW-01	14-11-0405-2-B	11/04/14 14:10	Aqueous	GC/MS JJ	11/08/14	11/08/14 18:19	141108L012

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloroethene	720	10	10.0	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	94	80-120	
Dibromofluoromethane	116	78-126	
1,2-Dichloroethane-d4	118	75-135	
Toluene-d8	102	80-120	

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 11/05/14
 Work Order: 14-11-0405
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-34B	14-11-0405-3-B	11/05/14 13:20	Aqueous	GC/MS JJ	11/08/14	11/08/14 17:51	141108L012

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	2.0	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	180	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 11/05/14
 Work Order: 14-11-0405
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	96	80-120	
Dibromofluoromethane	109	78-126	
1,2-Dichloroethane-d4	116	75-135	
Toluene-d8	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 11/05/14
 Work Order: 14-11-0405
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-001-15573	N/A	Aqueous	GC/MS JJ	11/06/14	11/06/14 15:05	141106L013

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 11/05/14
 Work Order: 14-11-0405
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	97	80-120	
Dibromofluoromethane	107	78-126	
1,2-Dichloroethane-d4	108	75-135	
Toluene-d8	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 11/05/14
 Work Order: 14-11-0405
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-001-15599	N/A	Aqueous	GC/MS JJ	11/08/14	11/08/14 11:15	141108L012

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	1.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 11/05/14
 Work Order: 14-11-0405
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

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<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,1-Dichloropropene	ND	1.0	1.00	
c-1,3-Dichloropropene	ND	0.50	1.00	
t-1,3-Dichloropropene	ND	0.50	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	10	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	10	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	1.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	1.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	1.0	1.00	
1,2,4-Trichlorobenzene	ND	1.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
Trichloroethene	ND	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	95	80-120	
Dibromofluoromethane	110	78-126	
1,2-Dichloroethane-d4	108	75-135	
Toluene-d8	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - Spike/Spike Duplicate

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 11/05/14
Work Order: 14-11-0405
Preparation: EPA 3510C
Method: EPA 8270C (M) Isotope Dilution

Project: Raytheon Main / 532.30

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
EW-01	Sample	Aqueous	GC/MS DDD	11/07/14	11/10/14 18:35	141107S04
EW-01	Matrix Spike	Aqueous	GC/MS DDD	11/07/14	11/10/14 18:03	141107S04
EW-01	Matrix Spike Duplicate	Aqueous	GC/MS DDD	11/07/14	11/11/14 10:15	141107S04

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
1,4-Dioxane	1812	20.00	1175	0	1153	0	50-130	2	0-20	3

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 11/05/14
Work Order: 14-11-0405
Preparation: EPA 5030C
Method: EPA 8260B

Project: Raytheon Main / 532.30

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-11-0399-22	Sample	Aqueous	GC/MS JJ	11/06/14	11/06/14 15:33	141106S031
14-11-0399-22	Matrix Spike	Aqueous	GC/MS JJ	11/06/14	11/06/14 16:02	141106S031
14-11-0399-22	Matrix Spike Duplicate	Aqueous	GC/MS JJ	11/06/14	11/06/14 16:30	141106S031

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	52.01	104	52.46	105	74-122	1	0-21	
Carbon Tetrachloride	ND	50.00	55.58	111	56.22	112	60-144	1	0-21	
Chlorobenzene	ND	50.00	50.10	100	50.01	100	73-120	0	0-22	
1,2-Dibromoethane	ND	50.00	51.98	104	52.29	105	80-122	1	0-20	
1,2-Dichlorobenzene	ND	50.00	50.25	101	51.37	103	70-120	2	0-26	
1,2-Dichloroethane	ND	50.00	52.13	104	52.61	105	64-142	1	0-20	
1,1-Dichloroethene	ND	50.00	49.68	99	50.66	101	52-136	2	0-21	
Ethylbenzene	ND	50.00	54.46	109	54.82	110	77-125	1	0-24	
Toluene	ND	50.00	53.23	106	53.50	107	72-126	1	0-23	
Trichloroethene	ND	50.00	51.28	103	51.49	103	74-128	0	0-22	
Vinyl Chloride	ND	50.00	44.58	89	45.60	91	67-133	2	0-20	
p/m-Xylene	ND	100.0	112.0	112	112.3	112	63-129	0	0-25	
o-Xylene	ND	50.00	56.45	113	56.43	113	62-128	0	0-24	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	53.81	108	54.42	109	68-134	1	0-21	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - Spike/Spike Duplicate

Hargis + Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122-6215

Date Received: 11/05/14
Work Order: 14-11-0405
Preparation: EPA 5030C
Method: EPA 8260B

Project: Raytheon Main / 532.30

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
14-11-0541-1	Sample	Aqueous	GC/MS JJ	11/08/14	11/08/14 11:43	141108S011
14-11-0541-1	Matrix Spike	Aqueous	GC/MS JJ	11/08/14	11/08/14 12:11	141108S011
14-11-0541-1	Matrix Spike Duplicate	Aqueous	GC/MS JJ	11/08/14	11/08/14 12:40	141108S011

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	52.34	105	51.34	103	74-122	2	0-21	
Carbon Tetrachloride	ND	50.00	57.11	114	55.90	112	60-144	2	0-21	
Chlorobenzene	ND	50.00	49.59	99	49.09	98	73-120	1	0-22	
1,2-Dibromoethane	ND	50.00	49.96	100	50.23	100	80-122	1	0-20	
1,2-Dichlorobenzene	ND	50.00	48.91	98	48.38	97	70-120	1	0-26	
1,2-Dichloroethane	ND	50.00	52.12	104	50.72	101	64-142	3	0-20	
1,1-Dichloroethene	ND	50.00	49.85	100	49.07	98	52-136	2	0-21	
Ethylbenzene	ND	50.00	53.84	108	53.41	107	77-125	1	0-24	
Toluene	ND	50.00	53.84	108	53.02	106	72-126	2	0-23	
Trichloroethene	ND	50.00	51.20	102	51.10	102	74-128	0	0-22	
Vinyl Chloride	ND	50.00	42.94	86	43.82	88	67-133	2	0-20	
p/m-Xylene	ND	100.0	110.6	111	109.1	109	63-129	1	0-25	
o-Xylene	ND	50.00	55.39	111	54.69	109	62-128	1	0-24	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	59.04	118	58.58	117	68-134	1	0-21	

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RPD: Relative Percent Difference. CL: Control Limits

Quality Control - LCS

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 11/05/14
 Work Order: 14-11-0405
 Preparation: EPA 3510C
 Method: EPA 8270C (M) Isotope Dilution

Project: Raytheon Main / 532.30

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-216-294	LCS	Aqueous	GC/MS DDD	11/07/14	11/08/14 15:26	141107L04
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>Qualifiers</u>
1,4-Dioxane		20.00	17.63	88	50-130	

Quality Control - LCS

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 11/05/14
 Work Order: 14-11-0405
 Preparation: EPA 5030C
 Method: EPA 8260B

Project: Raytheon Main / 532.30

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-001-15573	LCS	Aqueous	GC/MS JJ	11/06/14	11/06/14 14:08	141106L013
Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	53.10	106	80-120	73-127	
Carbon Tetrachloride	50.00	56.60	113	67-139	55-151	
Chlorobenzene	50.00	49.76	100	78-120	71-127	
1,2-Dibromoethane	50.00	53.11	106	80-120	73-127	
1,2-Dichlorobenzene	50.00	51.38	103	63-129	52-140	
1,2-Dichloroethane	50.00	52.59	105	70-130	60-140	
1,1-Dichloroethene	50.00	52.28	105	66-126	56-136	
Ethylbenzene	50.00	54.94	110	80-123	73-130	
Toluene	50.00	53.90	108	80-120	73-127	
Trichloroethene	50.00	51.35	103	80-122	73-129	
Vinyl Chloride	50.00	46.35	93	70-130	60-140	
p/m-Xylene	100.0	112.5	113	75-123	67-131	
o-Xylene	50.00	56.56	113	74-122	66-130	
Methyl-t-Butyl Ether (MTBE)	50.00	51.31	103	69-129	59-139	

Total number of LCS compounds: 14

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

Return to Contents

Quality Control - LCS

Hargis + Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego, CA 92122-6215

Date Received: 11/05/14
 Work Order: 14-11-0405
 Preparation: EPA 5030C
 Method: EPA 8260B

Project: Raytheon Main / 532.30

Page 3 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-001-15599	LCS	Aqueous	GC/MS JJ	11/08/14	11/08/14 10:18	141108L012
Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	52.77	106	80-120	73-127	
Carbon Tetrachloride	50.00	58.24	116	67-139	55-151	
Chlorobenzene	50.00	49.23	98	78-120	71-127	
1,2-Dibromoethane	50.00	49.93	100	80-120	73-127	
1,2-Dichlorobenzene	50.00	49.89	100	63-129	52-140	
1,2-Dichloroethane	50.00	50.52	101	70-130	60-140	
1,1-Dichloroethene	50.00	50.21	100	66-126	56-136	
Ethylbenzene	50.00	54.24	108	80-123	73-130	
Toluene	50.00	53.76	108	80-120	73-127	
Trichloroethene	50.00	52.26	105	80-122	73-129	
Vinyl Chloride	50.00	44.24	88	70-130	60-140	
p/m-Xylene	100.0	110.7	111	75-123	67-131	
o-Xylene	50.00	55.36	111	74-122	66-130	
Methyl-t-Butyl Ether (MTBE)	50.00	55.80	112	69-129	59-139	

Total number of LCS compounds: 14

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

Return to Contents

Sample Analysis Summary Report

Work Order: 14-11-0405

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<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA 8260B	EPA 5030C	799	GC/MS JJ	2
EPA 8270C (M) Isotope Dilution	EPA 3510C	928	GC/MS DDD	1


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Location 1: 7440 Lincoln Way, Garden Grove, CA 92841

Location 2: 7445 Lampson Avenue, Garden Grove, CA 92841

Glossary of Terms and Qualifiers

Work Order: 14-11-0405

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<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST FORM

DATE 11/4/14 PAGE 1 OF 1

PROJECT NAME RAYTHEON MAIN		PROJECT No./TASK No. 532.30		SAMPLE CONTAINERS		ANALYSIS REQUESTED		ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S		SPECIAL HANDLING		LABORATORY INFORMATION	
PROJECT MANAGER STEVE NETTO		Phone No. 858.455.6500		40 ml VOA 2 L Amber VOCs by EPA 8260B 1,4-DIOXANE BY 8270 MOD ~~1,4-DIOXANE BY 8270 MOD~~		0-10 10-100 100-1,000 >1,000		14-11-0405		CalScience Attn: Virendra Patel			
QA MANAGER		Fax No. 858.455.6533											
SAMPLER (SIGNATURE) <i>[Signature]</i>		SAMPLER (PRINTED) Tyler Evans ERIN HUNTER											
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX		PRESERVATION						REMARKS	
		Date	Time	Soil	Ground water	Surface water	Lab H ₂ O	HCl	HNO ₃	NaOH	H ₂ SO ₄		Ice
1	JB-110414B	11/4/14	1200				X	X			X		
2	EW-01	↓	1410	X			X				X		
	↓	↓	↓	X							X		
~~TE~~													
3	MW-34B	11/5/14	13:20	X			X			X			
	↓	↓	↓	X						X			
Total number of Containers per analysis:				8		2						Total No. of Containers: 10	
Relinquished by: <i>[Signature]</i>		Date: 11/5/14	Received by: <i>[Signature]</i>		Date: 11/5/14	INSTRUCTIONS 1. Fill out form completely except for shaded areas (lab use only); sign only after verified for completeness. 2. Complete in ballpoint pen. Draw one line through errors, initial and date correction. 3. Indicate number of sample containers in analysis request space; indicate choice with ✓ or x. 4. Note applicable preservatives, special instructions, and deviations from typical environmental samples. 5. Consult project QA documents for specific instructions.				Shipment Method: COURIER			
Company: H+A, Inc		Time: 1700	Company: ECI		Time: 1700					Send Results to: STEVE NETTO			
Relinquished by: <i>[Signature]</i>		Date: 11/5/14	Received by: <i>[Signature]</i>		Date: 11/5/14	Sample Receipt: ☐ No. of containers correct ☐ custody seals secure				Temp. @ receipt _____ °C ☐ received good condition/cold ☐ conforms to COC document			
Company: ECI		Time: 1800	Company: ECI		Time: 1800								

Calscience

WORK ORDER #: 14-11-0405

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: HARGIST ASSOCIATES, INC.

DATE: 11/5/14

TEMPERATURE: Thermometer ID: SC2 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 2.3 °C - 0.2 °C (CF) = 2.1 °C ☐ Blank ☒ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 676

CUSTODY SEALS INTACT:

☐ Cooler ☐ _____ ☐ No (Not Intact) ☒ Not Present ☐ N/A

Checked by: 676

☐ Sample ☐ _____ ☐ No (Not Intact) ☒ Not Present

Checked by: 802

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	☒	☐	☐
COC document(s) received complete.....	☒	☐	☐

☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.

☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.

Sampler's name indicated on COC.....	☒	☐	☐

Sample container label(s) consistent with COC.....	☒	☐	☐

Sample container(s) intact and good condition.....	☒	☐	☐

Proper containers and sufficient volume for analyses requested.....	☒	☐	☐

Analyses received within holding time.....	☒	☐	☐

Aqueous samples received within 15-minute holding time

☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfides ☐ Dissolved Oxygen..... ☐ ☐ ☒

Proper preservation noted on COC or sample container.....	☒	☐	☐

☐ Unpreserved vials received for Volatiles analysis

Volatile analysis container(s) free of headspace.....	☒	☐	☐

Tedlar bag(s) free of condensation.....	☐	☐	☒

CONTAINER TYPE:

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® ☐ TerraCores® ☐ _____

Aqueous: ☐ VOA ☒ VOA² ☐ VOAna₂ ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☒ 1AGB ☐ 1AGBna₂ ☐ 1AGBs

☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 1PB ☐ 1PBna ☐ 500PB

☐ 250PB ☐ 250PBn ☐ 125PB ☐ 125PBznna ☐ 100PJ ☐ 100PJna₂ ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar® ☐ Canister Other: ☐ _____ Trip Blank Lot#: N/A Labeled/Checked by: 802

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope

Reviewed by: 676

Preservative: h: HCL n: HNO₃ na₂: Na₂S₂O₃ na: NaOH p: H₃PO₄ s: H₂SO₄ u: Ultra-pure znna: ZnAc₂+NaOH f: Filtered

Scanned by: 676

GROUNDWATER EXTRACTION AND TREATMENT SYSTEM ANALYTICAL RESULTS



September 23, 2014

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1402701

Client Reference : RAYTHEON MAIN, FULLERTON OCSD, 532.15

Enclosed are the results for sample(s) received on September 16, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertain to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'E Rodriguez', is placed over a light gray rectangular background.

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN,FULLERTON OCSI

Report To : Steve Netto

Reported : 09/23/2014

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-091514	1402701-01	LAB H2O	9/15/14 12:00	9/16/14 10:05
CEFF	1402701-02	Groundwater	9/15/14 12:45	9/16/14 10:05



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN,FULLERTON OCSI

Report To : Steve Netto

Reported : 09/23/2014

Client Sample ID TB-091514

Lab ID: 1402701-01

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,1,1-Trichloroethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,1,2-Trichloroethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,1-Dichloroethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,1-Dichloroethene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,1-Dichloropropene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,2,3-Trichloropropane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,2,3-Trichlorobenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,2,4-Trichlorobenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,2,4-Trimethylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,2-Dibromoethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,2-Dichlorobenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,2-Dichloroethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,2-Dichloropropane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,3,5-Trimethylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,3-Dichlorobenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,3-Dichloropropane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
1,4-Dichlorobenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
2,2-Dichloropropane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
2-Chlorotoluene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
4-Chlorotoluene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
4-Isopropyltoluene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Benzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Bromobenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Bromodichloromethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Bromoform	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Bromomethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Carbon tetrachloride	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Chlorobenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Chloroethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Chloroform	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Chloromethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
cis-1,2-Dichloroethene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
cis-1,3-Dichloropropene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Dibromochloromethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN,FULLERTON OCSI

Report To : Steve Netto

Reported : 09/23/2014

Client Sample ID TB-091514

Lab ID: 1402701-01

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Dichlorodifluoromethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Ethylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Hexachlorobutadiene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Isopropylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
m,p-Xylene	ND	1.0	1	B4I0316	09/17/2014	09/17/14 13:23	
Methylene chloride	ND	1.0	1	B4I0316	09/17/2014	09/17/14 13:23	
n-Butylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
n-Propylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Naphthalene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
o-Xylene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
sec-Butylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Styrene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
tert-Butylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Tetrachloroethene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Toluene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
trans-1,2-Dichloroethene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Trichloroethene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Trichlorofluoromethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Vinyl chloride	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:23	
Surrogate: 1,2-Dichloroethane-d4	101 %	64 - 146		B4I0316	09/17/2014	09/17/14 13:23	
Surrogate: 4-Bromofluorobenzene	90.9 %	60 - 128		B4I0316	09/17/2014	09/17/14 13:23	
Surrogate: Dibromofluoromethane	99.4 %	72 - 141		B4I0316	09/17/2014	09/17/14 13:23	
Surrogate: Toluene-d8	86.6 %	61 - 124		B4I0316	09/17/2014	09/17/14 13:23	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN,FULLERTON OCSI

Report To : Steve Netto

Reported : 09/23/2014

Client Sample ID CEFF

Lab ID: 1402701-02

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,1,1-Trichloroethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,1,2-Trichloroethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,1-Dichloroethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,1-Dichloroethene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,1-Dichloropropene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,2,3-Trichloropropane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,2,3-Trichlorobenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,2,4-Trichlorobenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,2,4-Trimethylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,2-Dibromoethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,2-Dichlorobenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,2-Dichloroethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,2-Dichloropropane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,3,5-Trimethylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,3-Dichlorobenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,3-Dichloropropane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
1,4-Dichlorobenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
2,2-Dichloropropane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
2-Chlorotoluene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
4-Chlorotoluene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
4-Isopropyltoluene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Benzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Bromobenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Bromodichloromethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Bromoform	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Bromomethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Carbon tetrachloride	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Chlorobenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Chloroethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Chloroform	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Chloromethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
cis-1,2-Dichloroethene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
cis-1,3-Dichloropropene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Dibromochloromethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN,FULLERTON OCSI

Report To : Steve Netto

Reported : 09/23/2014

Client Sample ID CEFF

Lab ID: 1402701-02

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Dichlorodifluoromethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Ethylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Hexachlorobutadiene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Isopropylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
m,p-Xylene	ND	1.0	1	B4I0316	09/17/2014	09/17/14 13:46	
Methylene chloride	ND	1.0	1	B4I0316	09/17/2014	09/17/14 13:46	
n-Butylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
n-Propylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Naphthalene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
o-Xylene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
sec-Butylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Styrene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
tert-Butylbenzene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Tetrachloroethene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Toluene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
trans-1,2-Dichloroethene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Trichloroethene	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Trichlorofluoromethane	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Vinyl chloride	ND	0.50	1	B4I0316	09/17/2014	09/17/14 13:46	
Surrogate: 1,2-Dichloroethane-d4	97.8 %	64 - 146		B4I0316	09/17/2014	09/17/14 13:46	
Surrogate: 4-Bromofluorobenzene	87.8 %	60 - 128		B4I0316	09/17/2014	09/17/14 13:46	
Surrogate: Dibromofluoromethane	94.4 %	72 - 141		B4I0316	09/17/2014	09/17/14 13:46	
Surrogate: Toluene-d8	85.3 %	61 - 124		B4I0316	09/17/2014	09/17/14 13:46	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN,FULLERTON OCSI

Report To : Steve Netto

Reported : 09/23/2014

Client Sample ID CEFF

Lab ID: 1402701-02

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B4I0343	09/18/2014	09/19/14 20:15	
Surrogate: 1,2-Dichlorobenzene-d4	70.3 %	47 - 117		B4I0343	09/18/2014	09/19/14 20:15	
Surrogate: 2-Fluorobiphenyl	68.3 %	48 - 121		B4I0343	09/18/2014	09/19/14 20:15	
Surrogate: 4-Terphenyl-d14	151 %	58 - 142		B4I0343	09/18/2014	09/19/14 20:15	S1
Surrogate: Nitrobenzene-d5	67.5 %	27 - 151		B4I0343	09/18/2014	09/19/14 20:15	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN,FULLERTON OCSI

Report To : Steve Netto

Reported : 09/23/2014

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4I0316 - MSVOAW_LL

Blank (B4I0316-BLK1)

Prepared: 9/17/2014 Analyzed: 9/17/2014

1,1,1,2-Tetrachloroethane	ND	0.50			NR
1,1,1-Trichloroethane	ND	0.50			NR
1,1,2,2-Tetrachloroethane	ND	0.50			NR
1,1,2-Trichloroethane	ND	0.50			NR
1,1-Dichloroethane	ND	0.50			NR
1,1-Dichloroethene	ND	0.50			NR
1,1-Dichloropropene	ND	0.50			NR
1,2,3-Trichloropropane	ND	0.50			NR
1,2,3-Trichlorobenzene	ND	0.50			NR
1,2,4-Trichlorobenzene	ND	0.50			NR
1,2,4-Trimethylbenzene	ND	0.50			NR
1,2-Dibromo-3-chloropropane	ND	0.50			NR
1,2-Dibromoethane	ND	0.50			NR
1,2-Dichlorobenzene	ND	0.50			NR
1,2-Dichloroethane	ND	0.50			NR
1,2-Dichloropropane	ND	0.50			NR
1,3,5-Trimethylbenzene	ND	0.50			NR
1,3-Dichlorobenzene	ND	0.50			NR
1,3-Dichloropropane	ND	0.50			NR
1,4-Dichlorobenzene	ND	0.50			NR
2,2-Dichloropropane	ND	0.50			NR
2-Chlorotoluene	ND	0.50			NR
4-Chlorotoluene	ND	0.50			NR
4-Isopropyltoluene	ND	0.50			NR
Benzene	ND	0.50			NR
Bromobenzene	ND	0.50			NR
Bromodichloromethane	ND	0.50			NR
Bromoform	ND	0.50			NR
Bromomethane	ND	0.50			NR
Carbon tetrachloride	ND	0.50			NR
Chlorobenzene	ND	0.50			NR
Chloroethane	ND	0.50			NR
Chloroform	ND	0.50			NR
Chloromethane	ND	0.50			NR
cis-1,2-Dichloroethene	ND	0.50			NR
cis-1,3-Dichloropropene	ND	0.50			NR
Dibromochloromethane	ND	0.50			NR
Dibromomethane	ND	0.50			NR
Dichlorodifluoromethane	ND	0.50			NR



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN,FULLERTON OCSI

Report To : Steve Netto

Reported : 09/23/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4I0316 - MSVOAW_LL (continued)

Blank (B4I0316-BLK1) - Continued

Prepared: 9/17/2014 Analyzed: 9/17/2014

Ethylbenzene	ND	0.50			NR				
Hexachlorobutadiene	ND	0.50			NR				
Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				
Surrogate: 1,2-Dichloroethane-d4	26.98		25.0000		108	64 - 146			
Surrogate: 4-Bromofluorobenzene	24.02		25.0000		96.1	60 - 128			
Surrogate: Dibromofluoromethane	25.94		25.0000		104	72 - 141			
Surrogate: Toluene-d8	22.44		25.0000		89.8	61 - 124			

LCS (B4I0316-BS1)

Prepared: 9/17/2014 Analyzed: 9/17/2014

1,1-Dichloroethene	22.9800		20.0000		115	56 - 131			
Benzene	41.3700		40.0000		103	69 - 139			
Chlorobenzene	21.1600		20.0000		106	73 - 127			
MTBE	21.1700		20.0000		106	68 - 133			
Toluene	43.1100		40.0000		108	62 - 133			
Trichloroethene	20.5200		20.0000		103	72 - 139			
Surrogate: 1,2-Dichloroethane-d4	23.11		25.0000		92.4	64 - 146			
Surrogate: 4-Bromofluorobenzene	23.91		25.0000		95.6	60 - 128			
Surrogate: Dibromofluoromethane	22.78		25.0000		91.1	72 - 141			
Surrogate: Toluene-d8	23.18		25.0000		92.7	61 - 124			

LCS Dup (B4I0316-BSD1)

Prepared: 9/17/2014 Analyzed: 9/17/2014

1,1-Dichloroethene	19.9000		20.0000		99.5	56 - 131	14.4	20	
Benzene	38.7600		40.0000		96.9	69 - 139	6.51	20	
Chlorobenzene	20.4900		20.0000		102	73 - 127	3.22	20	
MTBE	20.8300		20.0000		104	68 - 133	1.62	20	
Toluene	41.0200		40.0000		103	62 - 133	4.97	20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN,FULLERTON OCSI

Report To : Steve Netto

Reported : 09/23/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4I0316 - MSVOAW_LL (continued)

LCS Dup (B4I0316-BSD1) - Continued

Prepared: 9/17/2014 Analyzed: 9/17/2014

Trichloroethene	19.4300		20.0000		97.2	72 - 139	5.46	20	
Surrogate: 1,2-Dichloroethane-d4	21.52		25.0000		86.1	64 - 146			
Surrogate: 4-Bromofluorobenzene	23.27		25.0000		93.1	60 - 128			
Surrogate: Dibromofluoromethane	21.68		25.0000		86.7	72 - 141			
Surrogate: Toluene-d8	22.06		25.0000		88.2	61 - 124			



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN,FULLERTON OCSI

Report To : Steve Netto

Reported : 09/23/2014

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4I0343 - MSSEMI

Blank (B4I0343-BLK1)

Prepared: 9/18/2014 Analyzed: 9/19/2014

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.8427		1.00000		84.3	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8309		1.00000		83.1	48 - 121			
Surrogate: 4-Terphenyl-d14	1.683		1.00000		168	58 - 142			S5
Surrogate: Nitrobenzene-d5	0.7648		1.00000		76.5	27 - 151			

LCS (B4I0343-BS1)

Prepared: 9/18/2014 Analyzed: 9/22/2014

1,4-Dioxane	0.978180	0.20	1.00000		97.8	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.6455		1.00000		64.5	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.6413		1.00000		64.1	48 - 121			
Surrogate: 4-Terphenyl-d14	1.327		1.00000		133	58 - 142			
Surrogate: Nitrobenzene-d5	0.6572		1.00000		65.7	27 - 151			

LCS Dup (B4I0343-BSD1)

Prepared: 9/18/2014 Analyzed: 9/19/2014

1,4-Dioxane	0.963430	0.20	1.00000		96.3	58 - 151	1.52	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.7447		1.00000		74.5	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7340		1.00000		73.4	48 - 121			
Surrogate: 4-Terphenyl-d14	1.556		1.00000		156	58 - 142			S5
Surrogate: Nitrobenzene-d5	0.6785		1.00000		67.8	27 - 151			



Certificate of Analysis

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San Diego , CA 92122

Project Number : RAYTHEON MAIN,FULLERTON OCSI

Report To : Steve Netto

Reported : 09/23/2014

Notes and Definitions

S5	Surrogate recovery was above laboratory acceptance limit. Sample reanalysis showed the same high recovery.
S1	Surrogate recovery was above laboratory acceptance limit. No target analyte was detected in the sample.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



DATE 9/15/14 PAGE 1 OF 1

[illegible]



November 14, 2014

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No.: T104704502

Re: ATL Work Order Number : 1403335
Client Reference : RATHEON MAIN (MONTHLY), 532.15

Enclosed are the results for sample(s) received on November 03, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read "E Rodriguez".

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-110314	1403335-01	Lab H2O	11/03/14 7:30	11/03/14 11:52
CEFF	1403335-02	Groundwater	11/03/14 8:10	11/03/14 11:52
CBT	1403335-03	Groundwater	11/03/14 8:20	11/03/14 11:52
POX	1403335-04	Groundwater	11/03/14 8:30	11/03/14 11:52
PF	1403335-05	Groundwater	11/03/14 8:40	11/03/14 11:52
INF	1403335-06	Groundwater	11/03/14 8:50	11/03/14 11:52
EW-02	1403335-07	Groundwater	11/03/14 10:00	11/03/14 11:52
MW-29	1403335-08	Groundwater	11/03/14 9:20	11/03/14 11:52

CASE NARRATIVE

The sample for EPA 317 (Bromate) analysis was subcontracted to Exova, Inc. with ELAP Cert.# 2652.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID TB-110314

Lab ID: 1403335-01

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,1,1-Trichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,1,2-Trichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,1-Dichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,1-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,1-Dichloropropene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,2,3-Trichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,2,3-Trichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,2,4-Trichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,2,4-Trimethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,2-Dibromoethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,2-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,2-Dichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,2-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,3,5-Trimethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,3-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,3-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
1,4-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
2,2-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
2-Chlorotoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
4-Chlorotoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
4-Isopropyltoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Benzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Bromobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Bromodichloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Bromoform	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Bromomethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Carbon tetrachloride	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Chlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Chloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Chloroform	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Chloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
cis-1,2-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
cis-1,3-Dichloropropene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Dibromochloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID TB-110314

Lab ID: 1403335-01

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Dichlorodifluoromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Ethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Hexachlorobutadiene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Isopropylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
m,p-Xylene	ND	1.0	1	B4J0816	11/05/2014	11/05/14 11:06	
Methylene chloride	ND	1.0	1	B4J0816	11/05/2014	11/05/14 11:06	
n-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
n-Propylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Naphthalene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
o-Xylene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
sec-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Styrene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
tert-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Tetrachloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Toluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
trans-1,2-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Trichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Trichlorofluoromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Vinyl chloride	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:06	
Surrogate: 1,2-Dichloroethane-d4	103 %	64 - 146		B4J0816	11/05/2014	11/05/14 11:06	
Surrogate: 4-Bromofluorobenzene	97.9 %	60 - 128		B4J0816	11/05/2014	11/05/14 11:06	
Surrogate: Dibromofluoromethane	107 %	72 - 141		B4J0816	11/05/2014	11/05/14 11:06	
Surrogate: Toluene-d8	94.0 %	61 - 124		B4J0816	11/05/2014	11/05/14 11:06	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID CEFF

Lab ID: 1403335-02

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,1,1-Trichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,1,2-Trichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,1-Dichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,1-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,1-Dichloropropene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,2,3-Trichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,2,3-Trichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,2,4-Trichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,2,4-Trimethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,2-Dibromoethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,2-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,2-Dichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,2-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,3,5-Trimethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,3-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,3-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
1,4-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
2,2-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
2-Chlorotoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
4-Chlorotoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
4-Isopropyltoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Benzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Bromobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Bromodichloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Bromoform	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Bromomethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Carbon tetrachloride	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Chlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Chloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Chloroform	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Chloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
cis-1,2-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
cis-1,3-Dichloropropene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Dibromochloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID CEFF

Lab ID: 1403335-02

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Dichlorodifluoromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Ethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Hexachlorobutadiene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Isopropylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
m,p-Xylene	ND	1.0	1	B4J0816	11/05/2014	11/05/14 11:28	
Methylene chloride	ND	1.0	1	B4J0816	11/05/2014	11/05/14 11:28	
n-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
n-Propylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Naphthalene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
o-Xylene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
sec-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Styrene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
tert-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Tetrachloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Toluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
trans-1,2-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Trichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Trichlorofluoromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Vinyl chloride	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:28	
Surrogate: 1,2-Dichloroethane-d4	88.1 %	64 - 146		B4J0816	11/05/2014	11/05/14 11:28	
Surrogate: 4-Bromofluorobenzene	82.3 %	60 - 128		B4J0816	11/05/2014	11/05/14 11:28	
Surrogate: Dibromofluoromethane	90.4 %	72 - 141		B4J0816	11/05/2014	11/05/14 11:28	
Surrogate: Toluene-d8	80.3 %	61 - 124		B4J0816	11/05/2014	11/05/14 11:28	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID CBT

Lab ID: 1403335-03

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,1,1-Trichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,1,2-Trichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,1-Dichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,1-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,1-Dichloropropene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,2,3-Trichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,2,3-Trichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,2,4-Trichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,2,4-Trimethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,2-Dibromoethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,2-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,2-Dichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,2-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,3,5-Trimethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,3-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,3-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
1,4-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
2,2-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
2-Chlorotoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
4-Chlorotoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
4-Isopropyltoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Benzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Bromobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Bromodichloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Bromoform	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Bromomethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Carbon tetrachloride	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Chlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Chloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Chloroform	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Chloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
cis-1,2-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
cis-1,3-Dichloropropene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Dibromochloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID CBT

Lab ID: 1403335-03

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Dichlorodifluoromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Ethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Hexachlorobutadiene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Isopropylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
m,p-Xylene	ND	1.0	1	B4J0816	11/05/2014	11/05/14 11:50	
Methylene chloride	ND	1.0	1	B4J0816	11/05/2014	11/05/14 11:50	
n-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
n-Propylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Naphthalene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
o-Xylene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
sec-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Styrene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
tert-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Tetrachloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Toluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
trans-1,2-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Trichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Trichlorofluoromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Vinyl chloride	ND	0.50	1	B4J0816	11/05/2014	11/05/14 11:50	
Surrogate: 1,2-Dichloroethane-d4	101 %	64 - 146		B4J0816	11/05/2014	11/05/14 11:50	
Surrogate: 4-Bromofluorobenzene	98.4 %	60 - 128		B4J0816	11/05/2014	11/05/14 11:50	
Surrogate: Dibromofluoromethane	103 %	72 - 141		B4J0816	11/05/2014	11/05/14 11:50	
Surrogate: Toluene-d8	96.0 %	61 - 124		B4J0816	11/05/2014	11/05/14 11:50	



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San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID POX

Lab ID: 1403335-04

Alkalinity, Total by SM 2320B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Total (as CaCO ₃)	270	5.0	1	B4K0185	11/07/2014	11/07/14 14:00	

Total Organic Carbon by SM 5310B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	4.4	3.0	1	B4K0117	11/05/2014	11/05/14 15:09	

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,1,1-Trichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,1,2-Trichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,1-Dichloroethane	0.61	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,1-Dichloroethene	0.87	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,1-Dichloropropene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,2,3-Trichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,2,3-Trichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,2,4-Trichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,2,4-Trimethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,2-Dibromoethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,2-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,2-Dichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,2-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,3,5-Trimethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,3-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,3-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
1,4-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
2,2-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
2-Chlorotoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
4-Chlorotoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
4-Isopropyltoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Benzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID POX

Lab ID: 1403335-04

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Bromodichloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Bromoform	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Bromomethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Carbon tetrachloride	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Chlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Chloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Chloroform	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Chloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
cis-1,2-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
cis-1,3-Dichloropropene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Dibromochloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Dibromomethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Dichlorodifluoromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Ethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Hexachlorobutadiene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Isopropylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
m,p-Xylene	ND	1.0	1	B4J0816	11/05/2014	11/05/14 12:13	
Methylene chloride	ND	1.0	1	B4J0816	11/05/2014	11/05/14 12:13	
n-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
n-Propylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Naphthalene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
o-Xylene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
sec-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Styrene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
tert-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Tetrachloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Toluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
trans-1,2-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Trichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Trichlorofluoromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	
Vinyl chloride	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:13	

Surrogate: 1,2-Dichloroethane-d4	98.9 %	64 - 146	B4J0816	11/05/2014	11/05/14 12:13
Surrogate: 4-Bromofluorobenzene	100 %	60 - 128	B4J0816	11/05/2014	11/05/14 12:13
Surrogate: Dibromofluoromethane	104 %	72 - 141	B4J0816	11/05/2014	11/05/14 12:13
Surrogate: Toluene-d8	96.4 %	61 - 124	B4J0816	11/05/2014	11/05/14 12:13



Certificate of Analysis

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Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID POX

Lab ID: 1403335-04

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	11	2.0	10	B4K0150	11/07/2014	11/11/14 12:05	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>77.6 %</i>	<i>47 - 117</i>		<i>B4K0150</i>	<i>11/07/2014</i>	<i>11/11/14 12:05</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>86.1 %</i>	<i>48 - 121</i>		<i>B4K0150</i>	<i>11/07/2014</i>	<i>11/11/14 12:05</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>118 %</i>	<i>58 - 142</i>		<i>B4K0150</i>	<i>11/07/2014</i>	<i>11/11/14 12:05</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>77.7 %</i>	<i>27 - 151</i>		<i>B4K0150</i>	<i>11/07/2014</i>	<i>11/11/14 12:05</i>	



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Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID PF

Lab ID: 1403335-05

UV Absorption by EPA 415.3

Analyst: PT

Analyte	Result (1/cm)	PQL (1/cm)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
UV Absorption	ND	0.01	1	B4K0077	11/04/2014	11/04/14 15:30	

Alkalinity, Total by SM 2320B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Total (as CaCO ₃)	270	5.0	1	B4K0185	11/07/2014	11/07/14 14:00	

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: PT/AM

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	ND	1.0	1	B4K0145	11/06/2014	11/07/14 07:00	

Total Organic Carbon by SM 5310B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	4.0	3.0	1	B4K0117	11/05/2014	11/05/14 15:28	



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Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID INF

Lab ID: 1403335-06

Bromide by Ion Chromatography EPA 300

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.27	0.05	1	B4K0103	11/04/2014	11/04/14 10:01	

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,1,1-Trichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,1,2-Trichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,1-Dichloroethane	0.65	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,1-Dichloroethene	66	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,1-Dichloropropene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,2,3-Trichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,2,3-Trichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,2,4-Trichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,2,4-Trimethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,2-Dibromoethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,2-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,2-Dichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,2-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,3,5-Trimethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,3-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,3-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
1,4-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
2,2-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
2-Chlorotoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
4-Chlorotoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
4-Isopropyltoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Benzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Bromobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Bromodichloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Bromoform	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Bromomethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Carbon tetrachloride	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Chlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	



Certificate of Analysis

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San Diego, CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID INF

Lab ID: 1403335-06

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Chloroform	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Chloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
cis-1,2-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
cis-1,3-Dichloropropene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Dibromochloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Dibromomethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Dichlorodifluoromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Ethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Hexachlorobutadiene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Isopropylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
m,p-Xylene	ND	1.0	1	B4J0816	11/05/2014	11/05/14 12:35	
Methylene chloride	ND	1.0	1	B4J0816	11/05/2014	11/05/14 12:35	
n-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
n-Propylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Naphthalene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
o-Xylene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
sec-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Styrene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
tert-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Tetrachloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Toluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
trans-1,2-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Trichloroethene	0.97	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Trichlorofluoromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
Vinyl chloride	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:35	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>102 %</i>	<i>64 - 146</i>		B4J0816	11/05/2014	<i>11/05/14 12:35</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.6 %</i>	<i>60 - 128</i>		B4J0816	11/05/2014	<i>11/05/14 12:35</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>72 - 141</i>		B4J0816	11/05/2014	<i>11/05/14 12:35</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.0 %</i>	<i>61 - 124</i>		B4J0816	11/05/2014	<i>11/05/14 12:35</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID INF

Lab ID: 1403335-06

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	27	2.0	1	B4K0122	11/07/2014	11/07/14 15:41	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>56.8 %</i>	<i>42 - 106</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/07/14 15:41</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>71.2 %</i>	<i>55 - 117</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/07/14 15:41</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>94.8 %</i>	<i>52 - 142</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/07/14 15:41</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>87.2 %</i>	<i>43 - 116</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/07/14 15:41</i>	



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San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID EW-02

Lab ID: 1403335-07

Bromide by Ion Chromatography EPA 300

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.22	0.05	1	B4K0103	11/04/2014	11/04/14 10:12	

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,1,1-Trichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,1,2-Trichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,1-Dichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,1-Dichloroethene	22	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,1-Dichloropropene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,2,3-Trichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,2,3-Trichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,2,4-Trichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,2,4-Trimethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,2-Dibromoethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,2-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,2-Dichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,2-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,3,5-Trimethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,3-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,3-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
1,4-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
2,2-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
2-Chlorotoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
4-Chlorotoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
4-Isopropyltoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Benzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Bromobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Bromodichloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Bromoform	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Bromomethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Carbon tetrachloride	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Chlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID EW-02

Lab ID: 1403335-07

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Chloroform	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Chloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
cis-1,2-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
cis-1,3-Dichloropropene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Dibromochloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Dibromomethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Dichlorodifluoromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Ethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Hexachlorobutadiene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Isopropylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
m,p-Xylene	ND	1.0	1	B4J0816	11/05/2014	11/05/14 12:58	
Methylene chloride	ND	1.0	1	B4J0816	11/05/2014	11/05/14 12:58	
n-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
n-Propylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Naphthalene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
o-Xylene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
sec-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Styrene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
tert-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Tetrachloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Toluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
trans-1,2-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Trichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Trichlorofluoromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Vinyl chloride	ND	0.50	1	B4J0816	11/05/2014	11/05/14 12:58	
Surrogate: 1,2-Dichloroethane-d4	104 %	64 - 146		B4J0816	11/05/2014	11/05/14 12:58	
Surrogate: 4-Bromofluorobenzene	99.8 %	60 - 128		B4J0816	11/05/2014	11/05/14 12:58	
Surrogate: Dibromofluoromethane	104 %	72 - 141		B4J0816	11/05/2014	11/05/14 12:58	
Surrogate: Toluene-d8	95.2 %	61 - 124		B4J0816	11/05/2014	11/05/14 12:58	



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San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID EW-02

Lab ID: 1403335-07

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	6.3	2.0	1	B4K0122	11/07/2014	11/10/14 12:50	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>55.7 %</i>	<i>42 - 106</i>		B4K0122	11/07/2014	<i>11/10/14 12:50</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>70.0 %</i>	<i>55 - 117</i>		B4K0122	11/07/2014	<i>11/10/14 12:50</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>95.4 %</i>	<i>52 - 142</i>		B4K0122	11/07/2014	<i>11/10/14 12:50</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>60.8 %</i>	<i>43 - 116</i>		B4K0122	11/07/2014	<i>11/10/14 12:50</i>	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-29

Lab ID: 1403335-08

Bromide by Ion Chromatography EPA 300

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.47	0.05	1	B4K0103	11/04/2014	11/04/14 10:24	

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,1,1-Trichloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,1,2-Trichloroethane	0.89	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,1-Dichloroethane	2.6	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,1-Dichloroethene	240	5.0	10	B4J0816	11/05/2014	11/05/14 13:42	
1,1-Dichloropropene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,2,3-Trichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,2,3-Trichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,2,4-Trichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,2,4-Trimethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,2-Dibromoethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,2-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,2-Dichloroethane	0.55	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,2-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,3,5-Trimethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,3-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,3-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
1,4-Dichlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
2,2-Dichloropropane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
2-Chlorotoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
4-Chlorotoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
4-Isopropyltoluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Benzene	0.57	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Bromobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Bromodichloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Bromoform	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Bromomethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Carbon tetrachloride	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Chlorobenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-29

Lab ID: 1403335-08

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Chloroform	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Chloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
cis-1,2-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
cis-1,3-Dichloropropene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Dibromochloromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Dibromomethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Dichlorodifluoromethane	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Ethylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Hexachlorobutadiene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Isopropylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
m,p-Xylene	ND	1.0	1	B4J0816	11/05/2014	11/05/14 13:20	
Methylene chloride	ND	1.0	1	B4J0816	11/05/2014	11/05/14 13:20	
n-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
n-Propylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Naphthalene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
o-Xylene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
sec-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Styrene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
tert-Butylbenzene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Tetrachloroethene	0.78	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Toluene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
trans-1,2-Dichloroethene	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Trichloroethene	4.6	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Trichlorofluoromethane	1.1	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	
Vinyl chloride	ND	0.50	1	B4J0816	11/05/2014	11/05/14 13:20	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>103 %</i>	<i>64 - 146</i>		B4J0816	11/05/2014	<i>11/05/14 13:42</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>108 %</i>	<i>64 - 146</i>		B4J0816	11/05/2014	<i>11/05/14 13:20</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.6 %</i>	<i>60 - 128</i>		B4J0816	11/05/2014	<i>11/05/14 13:42</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>101 %</i>	<i>60 - 128</i>		B4J0816	11/05/2014	<i>11/05/14 13:20</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>110 %</i>	<i>72 - 141</i>		B4J0816	11/05/2014	<i>11/05/14 13:20</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>72 - 141</i>		B4J0816	11/05/2014	<i>11/05/14 13:42</i>
<i>Surrogate: Toluene-d8</i>	<i>94.7 %</i>	<i>61 - 124</i>		B4J0816	11/05/2014	<i>11/05/14 13:20</i>
<i>Surrogate: Toluene-d8</i>	<i>92.7 %</i>	<i>61 - 124</i>		B4J0816	11/05/2014	<i>11/05/14 13:42</i>



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Client Sample ID MW-29

Lab ID: 1403335-08

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	97	2.0	1	B4K0122	11/07/2014	11/10/14 13:16	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>54.0 %</i>	<i>42 - 106</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/10/14 13:16</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>71.8 %</i>	<i>55 - 117</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/10/14 13:16</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>96.2 %</i>	<i>52 - 142</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/10/14 13:16</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>61.3 %</i>	<i>43 - 116</i>		<i>B4K0122</i>	<i>11/07/2014</i>	<i>11/10/14 13:16</i>	



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Report To : Steve Netto

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QUALITY CONTROL SECTION

Bromide by Ion Chromatography EPA 300 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0103 - No_Prep_IC_1_W

Blank (B4K0103-BLK1)

Prepared: 11/4/2014 Analyzed: 11/4/2014

Bromide ND 0.05 NR

LCS (B4K0103-BS1)

Prepared: 11/4/2014 Analyzed: 11/4/2014

Bromide 0.984000 0.05 1.00000 98.4 90 - 110

Duplicate (B4K0103-DUP1)

Source: 1403337-01RE1

Prepared: 11/4/2014 Analyzed: 11/4/2014

Bromide 17.7600 1.0 16.2500 NR 8.88 20

Matrix Spike (B4K0103-MS1)

Source: 1403337-01RE1

Prepared: 11/4/2014 Analyzed: 11/4/2014

Bromide 29.3980 1.0 2.50000 16.2500 526 80 - 120 M1

Matrix Spike Dup (B4K0103-MSD1)

Source: 1403337-01RE1

Prepared: 11/4/2014 Analyzed: 11/4/2014

Bromide 32.1360 1.0 2.50000 16.2500 635 80 - 120 8.90 20 M1



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Project Number : RATHEON MAIN (MONTHLY), 532.15

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UV Absorption by EPA 415.3 - Quality Control

Analyte	Result (1/cm)	PQL (1/cm)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0077 - No_Prep_II_W

Duplicate (B4K0077-DUP1)

Source: 1403335-05

Prepared: 11/4/2014 Analyzed: 11/4/2014

UV Absorption	ND	0.01		ND	NR			20	



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Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Alkalinity, Total by SM 2320B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0185 - z_No_Prep_WC_1

Blank (B4K0185-BLK1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

Alkalinity, Total (as CaCO₃)

ND

5.0

NR

LCS (B4K0185-BS1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

Alkalinity, Total (as CaCO₃)

105.150

5.0

99.9580

105

80 - 120

Duplicate (B4K0185-DUP1)

Source: 1403335-04

Prepared: 11/7/2014 Analyzed: 11/7/2014

Alkalinity, Total (as CaCO₃)

269.840

5.0

267.860

NR

0.736

20

Matrix Spike (B4K0185-MS1)

Source: 1403335-04

Prepared: 11/7/2014 Analyzed: 11/7/2014

Alkalinity, Total (as CaCO₃)

376.980

5.0

99.9580

267.860

109

80 - 120

Matrix Spike Dup (B4K0185-MSD1)

Source: 1403335-04

Prepared: 11/7/2014 Analyzed: 11/7/2014

Alkalinity, Total (as CaCO₃)

378.970

5.0

99.9580

267.860

111

80 - 120

0.526

20



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Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

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Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0145 - z_No_Prep_WC_1

Blank (B4K0145-BLK1)

Prepared: 11/6/2014 Analyzed: 11/7/2014

Residue, Suspended

ND

1.0

NR

LCS (B4K0145-BS1)

Prepared: 11/6/2014 Analyzed: 11/7/2014

Residue, Suspended

92.0000

10

96.6000

95.2

80 - 120

Duplicate (B4K0145-DUP1)

Source: 1403340-01

Prepared: 11/6/2014 Analyzed: 11/7/2014

Residue, Suspended

294.667

3.3

289.000

NR

1.94

10



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Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Total Organic Carbon by SM 5310B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0117 - No_Prep_II_W

Blank (B4K0117-BLK1)

Prepared: 11/5/2014 Analyzed: 11/5/2014

Organic Carbon, Total

ND

3.0

NR

LCS (B4K0117-BS1)

Prepared: 11/5/2014 Analyzed: 11/5/2014

Organic Carbon, Total

21.3200

3.0

20.0000

107

80 - 120

LCS Dup (B4K0117-BSD1)

Prepared: 11/5/2014 Analyzed: 11/5/2014

Organic Carbon, Total

21.9900

3.0

20.0000

110

80 - 120

3.09

20

Duplicate (B4K0117-DUP1)

Source: 1403004-07

Prepared: 11/5/2014 Analyzed: 11/5/2014

Organic Carbon, Total

2.10240

3.0

2.20820

NR

4.91

20



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Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4J0816 - MSVOA_LL_W

Blank (B4J0816-BLK1)

Prepared: 11/5/2014 Analyzed: 11/5/2014

1,1,1,2-Tetrachloroethane	ND	0.50			NR
1,1,1-Trichloroethane	ND	0.50			NR
1,1,2,2-Tetrachloroethane	ND	0.50			NR
1,1,2-Trichloroethane	ND	0.50			NR
1,1-Dichloroethane	ND	0.50			NR
1,1-Dichloroethene	ND	0.50			NR
1,1-Dichloropropene	ND	0.50			NR
1,2,3-Trichloropropane	ND	0.50			NR
1,2,3-Trichlorobenzene	ND	0.50			NR
1,2,4-Trichlorobenzene	ND	0.50			NR
1,2,4-Trimethylbenzene	ND	0.50			NR
1,2-Dibromo-3-chloropropane	ND	0.50			NR
1,2-Dibromoethane	ND	0.50			NR
1,2-Dichlorobenzene	ND	0.50			NR
1,2-Dichloroethane	ND	0.50			NR
1,2-Dichloropropane	ND	0.50			NR
1,3,5-Trimethylbenzene	ND	0.50			NR
1,3-Dichlorobenzene	ND	0.50			NR
1,3-Dichloropropane	ND	0.50			NR
1,4-Dichlorobenzene	ND	0.50			NR
2,2-Dichloropropane	ND	0.50			NR
2-Chlorotoluene	ND	0.50			NR
4-Chlorotoluene	ND	0.50			NR
4-Isopropyltoluene	ND	0.50			NR
Benzene	ND	0.50			NR
Bromobenzene	ND	0.50			NR
Bromodichloromethane	ND	0.50			NR
Bromoform	ND	0.50			NR
Bromomethane	ND	0.50			NR
Carbon tetrachloride	ND	0.50			NR
Chlorobenzene	ND	0.50			NR
Chloroethane	ND	0.50			NR
Chloroform	ND	0.50			NR
Chloromethane	ND	0.50			NR
cis-1,2-Dichloroethene	ND	0.50			NR
cis-1,3-Dichloropropene	ND	0.50			NR
Dibromochloromethane	ND	0.50			NR
Dibromomethane	ND	0.50			NR
Dichlorodifluoromethane	ND	0.50			NR
Ethylbenzene	ND	0.50			NR
Hexachlorobutadiene	ND	0.50			NR



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Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4J0816 - MSVOA_LL_W (continued)

Blank (B4J0816-BLK1) - Continued

Prepared: 11/5/2014 Analyzed: 11/5/2014

Isopropylbenzene	ND	0.50			NR				
m,p-Xylene	ND	1.0			NR				
Methylene chloride	ND	1.0			NR				
n-Butylbenzene	ND	0.50			NR				
n-Propylbenzene	ND	0.50			NR				
Naphthalene	ND	0.50			NR				
o-Xylene	ND	0.50			NR				
sec-Butylbenzene	ND	0.50			NR				
Styrene	ND	0.50			NR				
tert-Butylbenzene	ND	0.50			NR				
Tetrachloroethene	ND	0.50			NR				
Toluene	ND	0.50			NR				
trans-1,2-Dichloroethene	ND	0.50			NR				
Trichloroethene	ND	0.50			NR				
Trichlorofluoromethane	ND	0.50			NR				
Vinyl chloride	ND	0.50			NR				

Surrogate: 1,2-Dichloroethane-d4	24.78		25.0000		99.1	64 - 146			
Surrogate: 4-Bromofluorobenzene	24.77		25.0000		99.1	60 - 128			
Surrogate: Dibromofluoromethane	25.78		25.0000		103	72 - 141			
Surrogate: Toluene-d8	24.08		25.0000		96.3	61 - 124			

LCS (B4J0816-BS1)

Prepared: 11/5/2014 Analyzed: 11/5/2014

1,1-Dichloroethene	21.0200	0.50	20.0000		105	56 - 131			
Benzene	37.2000	0.50	40.0000		93.0	69 - 139			
Chlorobenzene	19.3500	0.50	20.0000		96.8	73 - 127			
MTBE	16.9000	0.50	20.0000		84.5	68 - 133			
Toluene	36.1700	0.50	40.0000		90.4	62 - 133			
Trichloroethene	19.1000	0.50	20.0000		95.5	72 - 139			

Surrogate: 1,2-Dichloroethane-d4	25.95		25.0000		104	64 - 146			
Surrogate: 4-Bromofluorobenzene	25.27		25.0000		101	60 - 128			
Surrogate: Dibromofluoromethane	26.15		25.0000		105	72 - 141			
Surrogate: Toluene-d8	24.37		25.0000		97.5	61 - 124			

LCS Dup (B4J0816-BSD1)

Prepared: 11/5/2014 Analyzed: 11/5/2014

1,1-Dichloroethene	22.3300	0.50	20.0000		112	56 - 131	6.04	20	
Benzene	39.5900	0.50	40.0000		99.0	69 - 139	6.22	20	
Chlorobenzene	21.0100	0.50	20.0000		105	73 - 127	8.23	20	
MTBE	18.0000	0.50	20.0000		90.0	68 - 133	6.30	20	
Toluene	38.6800	0.50	40.0000		96.7	62 - 133	6.71	20	
Trichloroethene	20.1700	0.50	20.0000		101	72 - 139	5.45	20	

Surrogate: 1,2-Dichloroethane-d4	25.88		25.0000		104	64 - 146			



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Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4J0816 - MSVOA_LL_W (continued)

LCS Dup (B4J0816-BSD1) - Continued

Prepared: 11/5/2014 Analyzed: 11/5/2014

Surrogate: 4-Bromofluorobenzene	25.76	25.0000	103	60 - 128
Surrogate: Dibromofluoromethane	25.84	25.0000	103	72 - 141
Surrogate: Toluene-d8	24.07	25.0000	96.3	61 - 124



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Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

1,4-Dioxane by EPA 8270: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0122 - z_MSSEMI

Blank (B4K0122-BLK1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	65.31		100.000		65.3	42 - 106			
Surrogate: 2-Fluorobiphenyl	81.08		100.000		81.1	55 - 117			
Surrogate: 4-Terphenyl-d14	97.76		100.000		97.8	52 - 142			
Surrogate: Nitrobenzene-d5	89.84		100.000		89.8	43 - 116			

LCS (B4K0122-BS1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	102.770	2.0	100.000		103	62 - 127			
Surrogate: 1,2-Dichlorobenzene-d4	58.85		100.000		58.8	42 - 106			
Surrogate: 2-Fluorobiphenyl	80.33		100.000		80.3	55 - 117			
Surrogate: 4-Terphenyl-d14	93.31		100.000		93.3	52 - 142			
Surrogate: Nitrobenzene-d5	82.51		100.000		82.5	43 - 116			

Matrix Spike (B4K0122-MS1)

Source: 1403384-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	157.770	2.0	100.000	54.1800	104	62 - 127			
Surrogate: 1,2-Dichlorobenzene-d4	47.77		100.000		47.8	42 - 106			
Surrogate: 2-Fluorobiphenyl	65.11		100.000		65.1	55 - 117			
Surrogate: 4-Terphenyl-d14	82.43		100.000		82.4	52 - 142			
Surrogate: Nitrobenzene-d5	73.82		100.000		73.8	43 - 116			

Matrix Spike Dup (B4K0122-MSD1)

Source: 1403384-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	167.160	2.0	100.000	54.1800	113	62 - 127	5.78	20	
Surrogate: 1,2-Dichlorobenzene-d4	55.43		100.000		55.4	42 - 106			
Surrogate: 2-Fluorobiphenyl	77.85		100.000		77.8	55 - 117			
Surrogate: 4-Terphenyl-d14	88.70		100.000		88.7	52 - 142			
Surrogate: Nitrobenzene-d5	85.63		100.000		85.6	43 - 116			



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Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0150 - MSSEMI_ISOTOPEDILN

Blank (B4K0150-BLK1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	ND	0.20		NR					
Surrogate: 1,2-Dichlorobenzene-d4	0.7243		1.00000		72.4	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8486		1.00000		84.9	48 - 121			
Surrogate: 4-Terphenyl-d14	1.118		1.00000		112	58 - 142			
Surrogate: Nitrobenzene-d5	0.7548		1.00000		75.5	27 - 151			



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Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0150 - MSSEMI_ISOTOPEDILN (continued)

LCS (B4K0150-BS1)

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	1.48939	0.20	1.00000		149	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.8020		1.00000		80.2	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.9741		1.00000		97.4	48 - 121			
Surrogate: 4-Terphenyl-d14	1.128		1.00000		113	58 - 142			
Surrogate: Nitrobenzene-d5	0.8504		1.00000		85.0	27 - 151			



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Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0150 - MSSEMI_ISOTOPEDILN (continued)

Matrix Spike (B4K0150-MS1)

Source: 1403402-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	1.38234	0.20	1.00000	ND	138	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.7426		1.00000		74.3	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.9297		1.00000		93.0	48 - 121			
Surrogate: 4-Terphenyl-d14	1.014		1.00000		101	58 - 142			
Surrogate: Nitrobenzene-d5	0.8270		1.00000		82.7	27 - 151			



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Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0150 - MSSEMI_ISOTOPEDILN (continued)

Matrix Spike Dup (B4K0150-MSD1)

Source: 1403402-02

Prepared: 11/7/2014 Analyzed: 11/7/2014

1,4-Dioxane	1.29151	0.20	1.00000	ND	129	58 - 151	6.79	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.6614		1.00000		66.1	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.7975		1.00000		79.8	48 - 121			
Surrogate: 4-Terphenyl-d14	1.057		1.00000		106	58 - 142			
Surrogate: Nitrobenzene-d5	0.7094		1.00000		70.9	27 - 151			



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Project Number : RATHEON MAIN (MONTHLY), 532.15

Report To : Steve Netto

Reported : 11/14/2014

Notes and Definitions

M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

Bromate by EPA 317.0
Ion Chromatography/Post Column Reaction-Visible Absorption Spectroscopy

Column: Dionex AS9-HC 4 mm x 250 mm, AG9-HC Guard 4 mm x 50 mm
Eluent: 10 mM Na₂CO₃
Flow: 1.2 mL/min
Injection: 250 µL
Detection: Visible, 450 nm

Sample preparation: The undiluted sample was treated with a 2.5 mL Dionex OnGuard II H cartridge to remove excess basic cations.

Parts Per Billion (µg/L)

<u>Sample ID</u>	<u>Result</u>
ATL Lab#: 1403335-04 / POX	0.4

Method Blank	ND

Detection Limit	0.3

Date Analyzed:	11-10-14

Quality Control Summary

Sample ID:	ATL Lab#: 1403335-04 / POX

<u>Analyte</u>	<u>Sample Result</u>	<u>Spike Conc</u>	<u>Spike Result</u>	<u>Spike % Rec</u>	<u>Spike Duplicate Result</u>	<u>Spike Duplicate % Rec</u>	<u>RPD</u>
Bromate	0.4	20.0	17.8	87	17.8	87	0
QC Guidelines				75-125		75-125	NMT 10

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 1403335

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)

RECEIVING LABORATORY:

Exova Inc.
9240 Santa Fe Springs Road
Santa Fe Springs, CA 90670
Phone : (562) 948-2225
Fax: (562) 948-5850
PO#: SC08876- STANDARD TAT 

IMPORTANT : Please include Work Order # and PO # in your invoice.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1403335-04 / POX 317 0 SUB [Bromate] 1-Poly Unpres - 125mL	11/17/14 17:00	Groundwater 11/04/14 08:30	11/03/14 08:30	

Released By

Date

11/3/14 1435

Received By

Date

11/3/14 1435

Released By

Date

11/3/14 3:49 pm

Received By

Date

11-03-14 3:49 pm

ORIGINAL: LABORATORY YELLOW: QA MANAGER PINK: FIELD/TASK MANAGER

[illegible]



November 21, 2014

Steve Netto
Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122
Tel: (619) 249-3166
Fax: (858) 455-6533

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No.: T104704502

Re: ATL Work Order Number : 1403599
Client Reference : RAYTHEON MAIN, 532.15

Enclosed are the results for sample(s) received on November 19, 2014 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read "E Rodriguez", is written over a light blue horizontal line.

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 11/21/2014

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PF	1403599-01	Groundwater	11/19/14 11:40	11/19/14 13:03
POX	1403599-02	Groundwater	11/19/14 11:35	11/19/14 13:03



Certificate of Analysis

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San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 11/21/2014

Client Sample ID PF

Lab ID: 1403599-01

1,4-Dioxane by EPA 8270: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	32	2.0	1	B4K0539	11/19/2014	11/20/14 16:14	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>53.6 %</i>	<i>42 - 106</i>		B4K0539	11/19/2014	<i>11/20/14 16:14</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>66.4 %</i>	<i>55 - 117</i>		B4K0539	11/19/2014	<i>11/20/14 16:14</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>83.7 %</i>	<i>52 - 142</i>		B4K0539	11/19/2014	<i>11/20/14 16:14</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>61.0 %</i>	<i>43 - 116</i>		B4K0539	11/19/2014	<i>11/20/14 16:14</i>	



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San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 11/21/2014

Client Sample ID POX

Lab ID: 1403599-02

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique

Analyst: BD

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B4K0589	11/20/2014	11/20/14 18:53	
Surrogate: 1,2-Dichlorobenzene-d4	82.8 %	47 - 117		B4K0589	11/20/2014	11/20/14 18:53	
Surrogate: 2-Fluorobiphenyl	85.7 %	48 - 121		B4K0589	11/20/2014	11/20/14 18:53	
Surrogate: 4-Terphenyl-d14	96.4 %	58 - 142		B4K0589	11/20/2014	11/20/14 18:53	
Surrogate: Nitrobenzene-d5	91.4 %	27 - 151		B4K0589	11/20/2014	11/20/14 18:53	



Certificate of Analysis

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San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 11/21/2014

QUALITY CONTROL SECTION

1,4-Dioxane by EPA 8270: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0539 - MSSEMI_W

Blank (B4K0539-BLK1)

Prepared: 11/19/2014 Analyzed: 11/20/2014

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	64.52		100.000		64.5	42 - 106			
Surrogate: 2-Fluorobiphenyl	78.00		100.000		78.0	55 - 117			
Surrogate: 4-Terphenyl-d14	135.5		100.000		135	52 - 142			
Surrogate: Nitrobenzene-d5	70.14		100.000		70.1	43 - 116			

LCS (B4K0539-BS1)

Prepared: 11/19/2014 Analyzed: 11/20/2014

1,4-Dioxane	99.6000	2.0	100.000		99.6	62 - 127			
Surrogate: 1,2-Dichlorobenzene-d4	64.24		100.000		64.2	42 - 106			
Surrogate: 2-Fluorobiphenyl	79.08		100.000		79.1	55 - 117			
Surrogate: 4-Terphenyl-d14	121.1		100.000		121	52 - 142			
Surrogate: Nitrobenzene-d5	72.44		100.000		72.4	43 - 116			

LCS Dup (B4K0539-BSD1)

Prepared: 11/19/2014 Analyzed: 11/20/2014

1,4-Dioxane	103.720	2.0	100.000		104	62 - 127	4.05	20	
Surrogate: 1,2-Dichlorobenzene-d4	61.59		100.000		61.6	42 - 106			
Surrogate: 2-Fluorobiphenyl	76.83		100.000		76.8	55 - 117			
Surrogate: 4-Terphenyl-d14	124.5		100.000		125	52 - 142			
Surrogate: Nitrobenzene-d5	68.64		100.000		68.6	43 - 116			



Certificate of Analysis

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San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 11/21/2014

1,4-Dioxane by EPA 8270/SIM: Isotope Dilution Technique - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes

Batch B4K0589 - MSSEMI_W

Blank (B4K0589-BLK1)

Prepared: 11/20/2014 Analyzed: 11/20/2014

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.8161		1.00000		81.6	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8463		1.00000		84.6	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9341		1.00000		93.4	58 - 142			
Surrogate: Nitrobenzene-d5	0.9408		1.00000		94.1	27 - 151			

LCS (B4K0589-BS1)

Prepared: 11/20/2014 Analyzed: 11/20/2014

1,4-Dioxane	1.24692	0.20	1.00000		125	58 - 151			
Surrogate: 1,2-Dichlorobenzene-d4	0.7937		1.00000		79.4	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8454		1.00000		84.5	48 - 121			
Surrogate: 4-Terphenyl-d14	0.8999		1.00000		90.0	58 - 142			
Surrogate: Nitrobenzene-d5	0.9216		1.00000		92.2	27 - 151			

LCS Dup (B4K0589-BS1)

Prepared: 11/20/2014 Analyzed: 11/20/2014

1,4-Dioxane	1.30195	0.20	1.00000		130	58 - 151	4.32	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.7555		1.00000		75.6	47 - 117			
Surrogate: 2-Fluorobiphenyl	0.8286		1.00000		82.9	48 - 121			
Surrogate: 4-Terphenyl-d14	0.9152		1.00000		91.5	58 - 142			
Surrogate: Nitrobenzene-d5	0.8671		1.00000		86.7	27 - 151			



Certificate of Analysis

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San Diego , CA 92122

Project Number : RAYTHEON MAIN, 532.15

Report To : Steve Netto

Reported : 11/21/2014

Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST FORM

DATE 11/19/2014 PAGE 1 OF 1

PROJECT NAME RAYTHEON MAIN				PROJECT No./TASK No. 532.15				SAMPLE CONTAINERS		ANALYSIS REQUESTED		ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S		SPECIAL HANDLING		LABORATORY INFORMATION																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
PROJECT MANAGER STEVE NETTO				Phone No.				1-LITER AMBER		EPA 8210-SM FOR 19-CONTAMINANTS EPA 8210-MMD FOR 19-CONTAMINANTS				4B HR TAT		ADVANCED TECHNOLOGY LABORATORY ATTN: RICHIE ARAPA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX			PRESERVATION					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980</