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HYDROGEOLOGY • ENGINEERING

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July 12, 2016

VIA FEDERAL EXPRESS STANDARD

Mr. Steve Rounds
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, Second Quarter 2016, Raytheon Company (Former Hughes Aircraft Company) Facility, 1901 West Malvern Avenue, Fullerton, California

Dear Mr. Rounds:

This letter has been prepared for the submittal of groundwater monitoring and groundwater treatment pilot testing data collected during the second quarter 2016 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 Work Plan 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 second quarter 2016 in general accordance with the DTSC-approved Groundwater Extraction and Treatment System (GETS) Pilot Testing, Corrective Measures Study Work Plan Addendum No. 6 (DTSC, 2013; H+A, 2013). The results of the second quarter 2016 groundwater monitoring and pilot GETS operation from March through May 2016 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 were taken at all wells and piezometers and groundwater samples were collected from extraction wells and select monitor wells in May 2016 in general accordance with the GMWPSAP and Addendum No.1 (H+A, 2003 and 2011a) (Table 1).

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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). Quarterly groundwater levels were measured in all wells on May 2, 2016 (Table 2).

Groundwater samples were collected during the period from May 2 through May 4, 2016 (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 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 Eurofins 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).

Additionally, samples also were collected after one screen volume was purged from three of the large volume monitor wells during this event; these additional samples were collected to compare results between the one screen volume purge method to the conventional three screen volume purge method which has been used historically at the Site for the large volume monitor wells. One casing volume samples were collected from monitor wells MW-32B, MW-33, and MW-36 (Table 3; Appendix B).

Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) samples collected in May 2016 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-34B and MW-36 in May 2016 (Table 3). The relative percent difference 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.

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 May 2016 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 second quarter of 2016. 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 ultra-violet (UV) light and hydrogen peroxide (UV Ox), followed by a granular activated carbon polish prior to disposal to the sanitary sewer.

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Initial startup of the pilot GETS took place in July 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 second quarter 2016, the pilot GETS was operational approximately 98 percent of the available runtime and approximately 5,370,000 gallons of groundwater were treated and discharged to the sanitary sewer (Table 4). Downtime during the second quarter of 2016 was associated with maintenance, alarm testing, and a peroxide flow switch upgrade to the facility. The average operational monthly discharge flowrate to the sanitary sewer from March 2016 through May 2016 was approximately 42 gpm. Since startup of the pilot GETS, approximately 121,600,000 gallons of groundwater was treated at an average operational flowrate of 41 gpm through the end of May 2016 (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 UV Ox advanced oxidation treatment unit is designed to remove 1,4-dioxane and most VOCs in groundwater. The carbon adsorption units are designed as a polish to the UV Ox treatment and remove possible low-level VOCs remaining post UV Ox (principally low-level ethanes). The UV Ox advanced oxidation and carbon adsorption treatment units effectively removed VOCs and 1,4-dioxane from extracted groundwater in second quarter 2016. The samples collected from the effluent of the UV Ox advanced oxidation treatment unit (Post UV Ox) were analyzed for VOCs and 1,4-dioxane, and resulted in non-detect values with exception of low-level detections of 1,1-dichloroethane (1,1-DCA) (Table 6). VOCs and 1,4-dioxane breakthrough at the carbon adsorption units (Carbon Breakthrough) were not observed in the second quarter 2016 with exception of low-level detections of 1,1-DCA. There was a low-level detection of 1,4-dioxane in a monthly Carbon Effluent sample collected on April 21, 2016, at a concentration of 1.8 micrograms per liter (ug/l), and a confirmation sample collected May 2, 2016, at a concentration of 0.42 ug/l, as well as low-level detections of 1,1-DCA in the Carbon Effluent in the second quarter of 2016. The low-level detections of 1,1-DCA in the Post UV Ox, Carbon Breakthrough and Carbon Effluent samples were near the laboratory detection limit, below the drinking water maximum contaminant level (MCL) and well below the pilot GETS permitted sewer discharge limit. The low-level detections of 1,4-dioxane in the Carbon Effluent were also near the laboratory detection limit and well below the permitted sewer discharge limit.

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Considering the non-detect values of 1,4-dioxane in the Post UV Ox and Carbon Breakthrough samples in the second quarter of 2016, the detection of 1,4-dioxane in the Carbon Effluent was likely due to the carbon adsorbers releasing past buildup of low-concentration 1,4-dioxane while earlier UV Ox system optimization was in progress. A carbon change-out for both carbon adsorbers was completed on May 4, 2016, and 1,4-dioxane was not detected in the Post UV Ox, Carbon Breakthrough, or Carbon Effluent samples collected in May 2016, after the change out. Additionally, 1,1-DCA was not detected in the Carbon Breakthrough or Carbon Effluent samples after the carbon change-out in May. Operation of the pilot GETS continues to be optimized to maximize the treatment of 1,4-dioxane and VOCs in extracted groundwater.

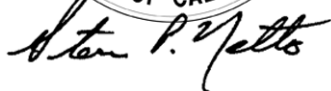
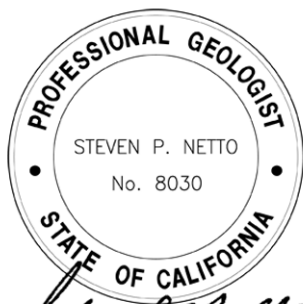
The previous oxidation treatment unit that used an ozone-peroxide technology was shown to create bromate as a treatment byproduct which occasionally exceeded the drinking water MCL (Figure 6). The levels of bromate previously generated as a treatment byproduct were not an issue while discharging to the sewer, but would preclude injection of treated groundwater back into the aquifer as part of future groundwater corrective measures. The current UV Ox oxidation treatment unit has not generated bromate above the MCL, and bromate was not detected in the Post UV Ox samples collected during the second quarter 2016.

The pilot GETS continues to remove VOCs and 1,4-dioxane from extracted groundwater. During the second quarter of 2016, the pilot GETS removed approximately 4.8 pounds of VOCs and 1.4 pounds of 1,4-dioxane from extracted groundwater. Since startup of the pilot GETS in July 2008, approximately 146 pounds of VOCs and 31 pounds of 1,4-dioxane have been removed from groundwater through May 2016 (Figure 7). Operation of the pilot GETS continues to be optimized to maximize the treatment of 1,4-dioxane and VOCs in extracted groundwater.

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

Sincerely,

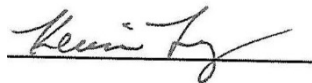
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REFERENCES

- 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.
- _____, 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.
- _____, 2013. Email from W. Jeffers, DTSC, re: Groundwater Extraction and Treatment System Pilot Testing Corrective Measures Study Workplan, Addendum #6, dated April 16, 2013.
- 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.
- _____, 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.
- _____, 2012. Groundwater Extraction and Treatment System Alternative Technology Pilot and Bench Test Summary Report, Raytheon Company (Former Hughes Aircraft Company Facility), 1901 West Malvern Avenue, Fullerton, California. November 30, 2012.
- _____, 2013. Groundwater Extraction and Treatment System Pilot Testing, Corrective Measures Study Workplan Addendum No. 6, Raytheon Company (former Hughes Aircraft Company), 1901 West Malvern Avenue, Fullerton, California. February 27, 2013.

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Enclosures

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- Table 4. Pilot Groundwater Extraction and Treatment System Operational Summary
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- 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
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- 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)



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Enclosure: (1 copy w-CD)

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

Mr. Paul Pongetti, Department of Toxic Substances Control, Cypress
Mr. Paul E. Brewer, Raytheon Company
Mr. Dave Mark, Orange County Water District
Mr. Eric Silvers, Regency Centers

(2 copies w-CD)

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Ms. Carol Owens, The Morgan Group, Inc.
Ms. Kim Buss, Orange County Public Works – Flood Control District

(via Email only)

Mr. Carl Bernhardt, California RWQCB, Santa Ana Region
Mr. Duc Nguyen, Orange County Public Works
Mr. Robert List, MMA Environmental
Mr. Neal Drawas, MMA Environmental

TABLES

TABLE 1

GROUNDWATER MONITORING PROGRAM

WELL IDENTIFIER	HYDROGEOLOGIC ZONE	SAMPLED MAY 2016	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)= Proposed reduced sampling schedule in Proposed Optimization to the Groundwater Monitoring Program 2014/2015 Letter (H+A,2015)

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

VOCs = Volatile organic compounds

**TABLE 2
GROUNDWATER LEVELS
SECOND QUARTER 2016**

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	05/02/16	184.70	175.93	8.77	
MW-08	05/02/16	155.91	147.26	8.65	
MW-09	05/02/16	180.10	174.55	5.55	
MW-13	05/02/16	141.84	139.00	2.84	
MW-15	05/02/16	144.95	148.58	-3.63	
MW-16	05/02/16	142.40	145.40	-3.00	
MW-17	05/02/16	142.70	141.41	1.29	
MW-18	05/02/16	142.32	142.11	0.21	
MW-19	05/02/16	142.06	141.70	0.36	
MW-20	05/02/16	184.19	170.57	13.62	
MW-21	05/02/16	141.18	137.45	3.73	
MW-22	05/02/16	138.65	137.70	0.95	
MW-23	05/02/16	137.33	138.15	-0.82	
MW-24	05/02/16	142.83	137.30	5.53	
MW-25	05/02/16	142.64	137.12	5.52	
MW-26A	05/02/16	137.04	136.06	0.98	
MW-26B	05/02/16	137.05	140.25	-3.20	
MW-26C	05/02/16	137.22	142.49	-5.27	
MW-27	05/02/16	137.16	141.80	-4.64	
MW-28	05/02/16	140.77	146.00	-5.23	
MW-29	03/03/16	139.81	179.50	-39.69	Pilot GETS
MW-29	04/05/16	139.81	177.86	-38.05	Pilot GETS
MW-29	05/02/16	139.81	182.82	-43.01	Pilot GETS
MW-30A	05/02/16	129.44	136.35	-6.91	
MW-30B	05/02/16	129.39	133.68	-4.29	

**TABLE 2
GROUNDWATER LEVELS
SECOND QUARTER 2016**

Well Identifier	Date Measured	Reference Point Elevation (a) (feet msl)	Depth to Water (feet bls)	Water Level Elevation (feet msl)	Remediation System On
<u>Reginal Groundwater System Monitor and Extraction Wells (continued)</u>					
MW-31	05/02/16	119.60	126.00	-6.40	
MW-32A	05/02/16	92.88	103.12	-10.24	
MW-32B	05/02/16	92.89	102.73	-9.84	
MW-32C	05/02/16	92.88	89.72	3.16	
MW-33	05/02/16	83.19	98.13	-14.94	
MW-34A	05/02/16	153.25	158.71	-5.46	
MW-34B	05/02/16	153.11	162.00	-8.89	
MW-34C	05/02/16	153.29	161.50	-8.21	
MW-35A	05/02/16	93.57	91.36	2.21	
MW-35B	05/02/16	93.56	98.47	-4.91	
MW-35C	05/02/16	93.55	102.43	-8.88	
MW-36	05/02/16	86.65	103.14	-16.49	
MW-37	05/02/16	155.60	153.90	1.70	
MW-38	05/02/16	154.90	161.35	-6.45	
MW-39	05/02/16	84.25	101.39	-17.14	
MW-40	05/02/16	123.40	126.37	-2.97	
MW-41	05/02/16	155.60	166.35	-10.75	
EW-01	05/02/16	141.07	143.98	-2.91	
EW-02	03/03/16	132.97	141.15	-8.18	Pilot GETS
EW-02	04/05/16	132.97	141.38	-8.41	Pilot GETS
EW-02	05/02/16	132.97	144.39	-11.42	Pilot GETS
<u>Perched Zone Water Levels</u>					
P-07	05/02/16	142.31	113.73	28.58	
P-09	05/02/16	183.86	120.85	63.01	

FOOTNOTES

- (a) Reference point elevations are relative to City of Fullerton datum.
- bls = Below land surface
- msl = Mean sea level
- Pilot GETS = Pilot Groundwater Extraction and Treatment System On

TABLE 3

PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
SECOND QUARTER 2016

		Concentration (micrograms per liter).....													Semi-VOCs
			VOLATILE ORGANIC COMPOUNDS (FEDERAL MCL/CALIFORNIA MCL)													
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 (37/1**)
Regional Groundwater System Monitor and Extraction Wells																
MW-08	05/03/16	ORG	< 0.50	< 0.50	0.65	< 0.50	< 0.50	25	9.60	< 0.50	< 0.50	< 0.50	140	< 0.50	< 0.50	0.70
MW-08 Historical Range***			< 0.50 - 0.95	< 0.50 - 0.5	< 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 - 2.3	< 0.20 - 130
MW-21	05/02/16	ORG	<2.0	<2.0	<2.0	22	3.6	1,400	<2.0	4.1	<2.0	11.0	20	<2.0	<2.0	220
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 - < 25	11 - 1,100
MW-26C	05/03/16	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 - 57
MW-28	05/03/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.8	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
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	03/03/16	ORG	< 0.50	< 0.50	< 0.50	3.0	0.65	330	< 0.50	0.87	< 0.50	0.97	2.9	1.1	< 0.50	120
MW-29	04/05/16	ORG	< 0.50	< 0.50	< 0.50	3.9	< 0.50	330	< 0.50	0.9	< 0.50	1.1	2.5	1.2	< 0.50	91
MW-29	05/05/16	ORG	< 0.50	< 0.50	< 0.50	3.6	< 0.50	380	< 0.50	0.96	< 0.50	1.2	2.6	1.0	< 0.50	94
MW-29 Historical Range***			< 0.50 - 0.57	< 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 - 2.2	< 0.50 - < 5.0	26 BE - 301
MW-30A	05/03/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.99	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.23
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	05/03/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	20	5.5	< 0.50	< 0.50	< 0.50	96	< 0.50	0.75	0.43
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 - 110	< 0.50	< 0.50 - 4.5	< 0.20 - 28 E
MW-31	05/04/16	ORG	< 0.50	< 0.50	< 0.50	1.30	< 0.50	140	< 0.50	< 0.50	< 0.50	< 0.50	6.2	< 0.50	0.87	3.9
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_1SV	05/04/16	ORG	< 0.50	< 0.50	< 0.50	1.0	< 0.50	120	4.5	< 0.50	< 0.50	< 0.50	42	< 0.50	< 0.50	2.9
MW-32B ⁽¹⁾	05/04/16	ORG	< 0.50	< 0.50	< 0.50	1.3	< 0.50	160	5.4	< 0.50	< 0.50	< 0.50	54	< 0.50	< 0.50	2.7
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	0.39 - 4.6
MW-33_1SV	05/03/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	5.2	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20
MW-33 ⁽²⁾	05/03/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	5.9	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 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 - 2.0	< 0.50	< 0.50 - 1.4	< 0.20 - < 2.0
MW-34B	05/03/16	ORG	< 0.50	< 0.50	< 0.50	0.94	< 0.50	57	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	30
MW-34B	05/03/16	DUP	< 0.50	< 0.50	< 0.50	1.1	< 0.50	73	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	24
MW-34B	05/03/16	SPT	<1.0	<1.0	<1.0	<1.0	< 0.50	80	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	27
MW-34B Historical Range***			< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - 0.50	< 0.50 - 9.8	< 0.50 - 1.7	20 E - 1,100	< 0.50 - < 5.0	< 0.50 - 0.54	< 0.50	< 0.50 - 2.6	< 0.50 - 2.1	< 0.50 - < 5.0	< 0.50 - 2.6	4.1 - 260
MW-35C	05/03/16	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

TABLE 3

PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
SECOND QUARTER 2016

.....Concentration (micrograms per liter).....																	
Well Identifier / Sample Identifier	Date Sampled	QA Code	VOLATILE ORGANIC COMPOUNDS (FEDERAL MCL/CALIFORNIA MCL)											Semi-VOCs			
			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 (37/1**)	
Regional Groundwater System Monitor and Extraction Wells (cont'd)																	
MW-36_1SV	05/03/16	ORG	< 0.50	< 0.50	< 0.50	0.64	< 0.50	57	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.9
MW-36 ^(S)	05/03/16	ORG	< 0.50	< 0.50	< 0.50	1.0	< 0.50	110	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	6.0
MW-36	05/03/16	DUP	< 0.50	< 0.50	< 0.50	1.0	< 0.50	120	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	5.2
MW-36	05/03/16	SPT	<1.0	<1.0	<1.0	<1.0	< 0.50	130	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.3
MW-36 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 1.9	< 0.50	2.9 - 220	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 5.9	< 0.20 - 15	
MW-37	05/03/16	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	< 0.50	< 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	05/03/16	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	< 0.50	< 0.20
Historical High/Low																	
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	< 0.50	< 0.20 - 0.34
MW-39	05/03/16	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	1.1	< 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 - 1.4	< 0.20	
MW-40	05/04/16	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	< 0.50	< 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	< 0.50	< 0.20
MW-41	05/03/16	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	< 0.50	< 0.20
MW-41 Historical Range***			< 0.50	< 0.50	< 0.50 - 0.88	< 0.50 - 1.1	< 0.50	< 0.50 - 110	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 110	< 0.50	< 0.50	< 0.50	< 0.20 - 10
EW-01	05/02/16	ORG	< 0.50	< 0.50	< 0.50	3.3	0.6	250	< 0.50	0.78	< 0.50	1.5	< 0.50	< 0.50	< 0.50	< 0.50	73
EW-01 Historical Range***			< 0.50 - 2.0	< 0.50 - 0.53	< 0.50 - 1.2	< 0.50 - 16	< 0.50 - 4.0	< 0.50 - 1,600 E	< 0.50 - 0.52	< 0.50 - 4.3	< 0.50 - < 2.5	< 0.50 - 10	< 0.50 - 3.3	< 0.50 - 0.61	< 0.50 - 4.6	5.1 - 990 E	
EW-02	03/03/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	34	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	11
EW-02	04/05/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	35	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	7.2
EW-02	05/05/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	36	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	15
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	
QUALITY ASSURANCE/QUALITY CONTROL SAMPLES																	
TB-030316	03/03/16	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	< 0.50	NA
TB-040516	04/05/16	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	< 0.50	NA
TB-050216	05/02/16	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	< 0.50	NA
TB-050316	05/03/16	TB-SPT	< 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	< 0.50	NA
TB-050516	05/05/16	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	< 0.50	NA

TABLE 3

PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
SECOND QUARTER 2016

Well Identifier / Sample Identifier		Date Sampled	QA CodeConcentration (micrograms per liter).....											Semi-VOCs		
				VOLATILE ORGANIC COMPOUNDS (FEDERAL MCL/CALIFORNIA MCL)													
				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 (37/1**)

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

- (1) Chloromethane was detected at a concentration of 0.60 ug/l in monitor well MW-32B collected on 05/04/16
- (2) Chloromethane was detected at a concentration of 0.50 ug/l in monitor well MW-33 collected on 05/03/16
- (3) Chloromethane was detected at a concentration of 0.96 ug/l in monitor well MW-36 collected on 05/03/16

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
 RB = Rinsate blank sample
 ug/l = Micrograms per liter
 MCL = Maximum Contaminant Level
 QA = Quality Assurance
 SPT = Split sample
 1SV = One Screen Volume

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%
2014^(g)	7,690,471	14.6	46.8	2,740	8,760	31%
2015^(h)	18,019,312	34.3	47.9	6,275	8,760	72%
Dec-15	2,185,005	43.4	46.6	782	843	93%
Jan-16	1,668,283	46.1	46.2	602	603	100%
Feb-16	1,938,403	43.8	45.0	717	738	97%
1Q2016	5,791,691	44.3	45.9	2,102	2,184	96%
Mar-16	1,846,995	38.9	40.2	766	792	97%
Apr-16	1,841,301	42.6	42.9	715	720	99%
May-16	1,679,010	43.1	43.7	641	649	99%
2Q2016	5,367,306	41.4	42.2	2,122	2,162	98%
SINCE INCEPTION	121,594,501	29.2	41.3	49,052	69,362	71%

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.

(g) 2014 Calendar year is from 12/1/2013 through 11/30/2014.

(h) 2015 Calendar year is from 12/1/2014 through 11/30/2015

gpm = gallons per minute

Refer to previous quarterly reports for detail of 2008 thru 2014 operational summary

Treatment of groundwater from EW-02 initiated in 2010

Treatment of groundwater from MW-29 initiated in 2014

CEFF = Carbon effluent

TABLE 5

PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM SAMPLING SCHEDULE

COMPOUND(S) / CONSTITUENT	ANALYTICAL METHOD	SAMPLE CONTAINER	REPORTING DETECTION LIMITS (milligrams per liter)	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)	Post-Carbon (CEFF)
COMPOUNDS/CONSTITUENTS NORMALLY REQUIRED AS PART OF NPDES OR WDR PERMITS, PURSUANT TO CRWQCB REGION 8 ORDER NO. R8-2003-008⁵																							
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	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	1L Amber	0.0002			X						X							X				
Total Suspended Solids	SM2540D	250 mL poly	10											X									
Total Dissolved Solids	SM2540C	250 mL poly	10																		X	X	
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					X	X		
Bicarbonate Alkalinity	SM2320B	250 mL poly	2.0	(a)										X	X					X	X		
Carbonate Alkalinity	SM2320B	250 mL poly	2.0	(a)										X	X					X	X		
Total Alkalinity	SM2320B	250 mL poly	2.0	(a)										X	X					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				X				
OTHER CONSTITUENTS/COMPOUNDS																							
Total Organic Carbon	SM5310B	3 - 40 mL VOA, HCl	3.0	(a)										X	X					X	X	X	
Anions (Chloride, Sulfate, Nitrate, Nitrite, and Phosphate)	EPA 300.0	500 mL poly	Varies	(a)																X	X	X	
Chemical Oxygen Demand	EPA 410.4	125 mL poly, H ₂ SO ₄	5.0	(a)																X	X	X	
UV Absorption (UVA) @254nm	EPA 415.3	250mL Amber	N/A	(a)										X						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	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	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	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	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	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	X	
Flow-Meter	N/A	N/A	N/A	X						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 nm = Nanometers
 N/A = Not applicable EPA = U.S. Environmental Protection Agency
 mL = Milliliter SIM = Selected ion monitoring
 VOA = Volatile organic analysis SM = Standard Method
 HCl = Hydrochloric acid L = Liter
 HNO₃ = Nitric acid poly = High density polyethylene bottle
 H₂SO₄ = Sulfuric acid Amber = Amber glass bottle

**TABLE 6
SELECT COMPOUNDS MONITORED IN
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM SAMPLES
SECOND QUARTER 2016**

Compound	Date	Units	MW-21 ^(M)	MW-29	EW-01 ^(M)	EW-02	INF [*]	PF	POX	CBT	CEFF
Extraction Rate	3/1/16 - 5/31/16	gpm	0	10	0	40	--	--	--	--	--
1,1,2-Trichloroethane (5 ug/L MCL)	03/03/16	ug/L	--	0.97	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	03/17/16	ug/L	--	1.1	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	04/05/16	ug/L	--	1.1	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	04/21/16	ug/L	--	1.1	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	05/02/16	ug/L	11	--	1.5	--	--	--	--	--	--
	05/05/16	ug/L	--	1.2	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
1,1-Dichloroethane (5 ug/L MCL)	03/03/16	ug/L	--	3.0	--	<0.5	0.9	--	0.51	0.53	0.54
	03/17/16	ug/L	--	3.9	--	<0.5	1.0	--	0.64	0.65	0.71
	04/05/16	ug/L	--	3.9	--	<0.5	1.2	--	0.65	0.62	0.62
	04/21/16	ug/L	--	3.3	--	<0.5	1.1	--	0.63	0.67	0.68
	05/02/16	ug/L	22	--	3.3	--	--	--	--	--	--
	05/05/16	ug/L	--	3.6	--	<0.5	1.0	--	0.68	<0.5	<0.5
1,1-Dichloroethene (6 ug/L MCL)	03/03/16	ug/L	--	330	--	34	81	--	<0.5	<0.5	<0.5
	03/17/16	ug/L	--	420	--	35	120	--	<0.5	<0.5	<0.5
	04/05/16	ug/L	--	330	--	35	98	--	<0.5	<0.5	<0.5
	04/21/16	ug/L	--	340	--	31	95	--	<0.5	<0.5	<0.5
	05/02/16	ug/L	1,400	--	250	--	--	--	--	--	--
	05/05/16	ug/L	--	380	--	36	97	--	<0.5	<0.5	<0.5
1,2-Dichloroethane (0.5 ug/L MCL)	03/03/16	ug/L	--	0.65	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	03/17/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	04/05/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	04/21/16	ug/L	--	0.64	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	05/02/16	ug/L	3.6	--	0.61	--	--	--	--	--	--
	05/05/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene (6 ug/L MCL)	03/03/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	03/17/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	04/05/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	04/21/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	05/02/16	ug/L	<2.0	--	<0.5	--	--	--	--	--	--
	05/05/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
Tetrachloroethene (5 ug/L MCL)	03/03/16	ug/L	--	0.87	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	03/17/16	ug/L	--	1.00	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	04/05/16	ug/L	--	0.90	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	04/21/16	ug/L	--	0.94	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	05/02/16	ug/L	4.1	--	0.78	--	--	--	--	--	--
	05/05/16	ug/L	--	0.96	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
Trichloroethene (5 ug/L MCL)	03/03/16	ug/L	--	2.9	--	<0.5	0.7	--	<0.5	<0.5	<0.5
	03/17/16	ug/L	--	2.7	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	04/05/16	ug/L	--	2.5	--	<0.5	0.64	--	<0.5	<0.5	<0.5
	04/21/16	ug/L	--	2.7	--	<0.5	0.81	--	<0.5	<0.5	<0.5
	05/02/16	ug/L	20	--	<0.5	--	--	--	--	--	--
	05/05/16	ug/L	--	2.6	--	<0.5	0.67	--	<0.5	<0.5	<0.5
1,4-Dioxane (1 ug/L California Notification Level)	03/03/16	ug/L	--	120	--	11	27	--	<0.2	--	<0.2
	03/17/16	ug/L	--	140	--	11	33	--	<0.2	<0.2	<0.2
	04/05/16	ug/L	--	91	--	7.2	27	--	<0.2	--	<0.2
	04/21/16	ug/L	--	94	--	7.5	24	--	<0.2	<0.2	1.8
	05/02/16	ug/L	220	--	73	--	--	--	--	--	0.42
	05/05/16	ug/L	--	94	--	15	37	--	<0.2	<0.2	<0.2
Bromide	03/03/16	mg/L	--	0.46	--	0.23	0.22	--	--	--	--
	04/05/16	mg/L	--	0.48	--	0.23	0.28	--	--	--	--
	05/05/16	mg/L	--	0.43	--	0.22	0.27	--	--	--	--
Bromate (10 ug/L MCL)	03/03/16	ug/L	--	--	--	--	--	--	<1.0	--	--
	04/05/16	ug/L	--	--	--	--	--	--	<0.5	--	--
	05/05/16	ug/L	--	--	--	--	--	--	<0.5	--	--
Total Non-Filterable-Residue	03/03/16	mg/L	--	--	--	--	--	<1.0	--	--	--
	04/05/16	mg/L	--	--	--	--	--	<1.0	--	--	--
	05/05/16	mg/L	--	--	--	--	--	<1.0	--	--	--
Total Filterable Residue (500 mg/L MCL)	03/03/16	mg/L	--	800	--	600	640	--	650	--	650

FOOTNOTES

(a) = inactive extraction wells; extraction wells MW-21 and EW-01 operated from July 2008 to November 2009.

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

ug/L = Micrograms per liter

mg/L = Milligrams per liter

gpm = gallon per minute

(-) = Not scheduled for performance monitoring

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

INF* = Influent (extraction wells EW-02 and MW-29)

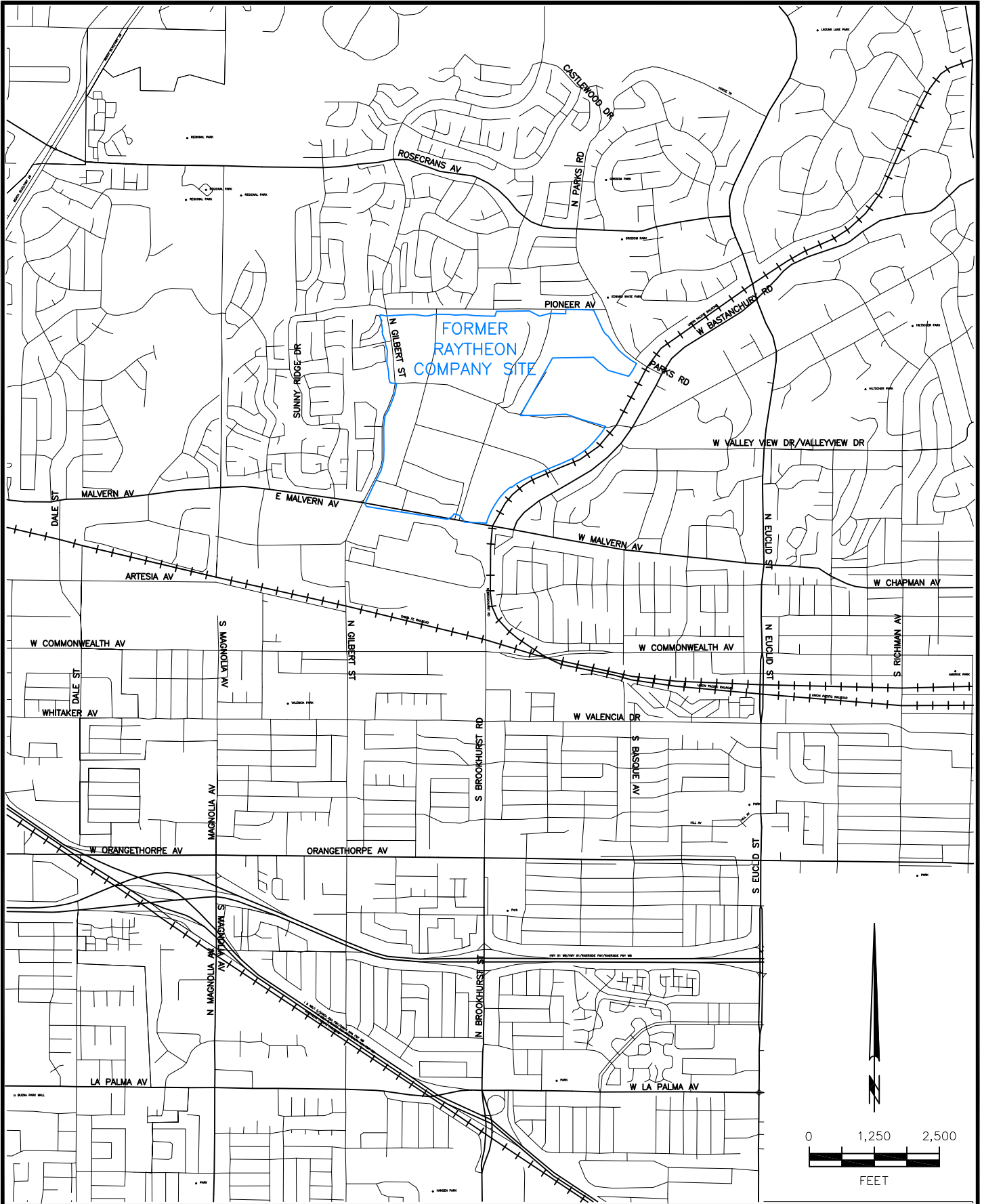
PF = Post Particulate Filter

POX = Post UV/Chem-Ox

CBT = Carbon Breakthrough

CEFF = Carbon Effluent

FIGURES



HARGIS + ASSOCIATES, INC.
Hydrogeology/Engineering

FIGURE 1. SITE LOCATION

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

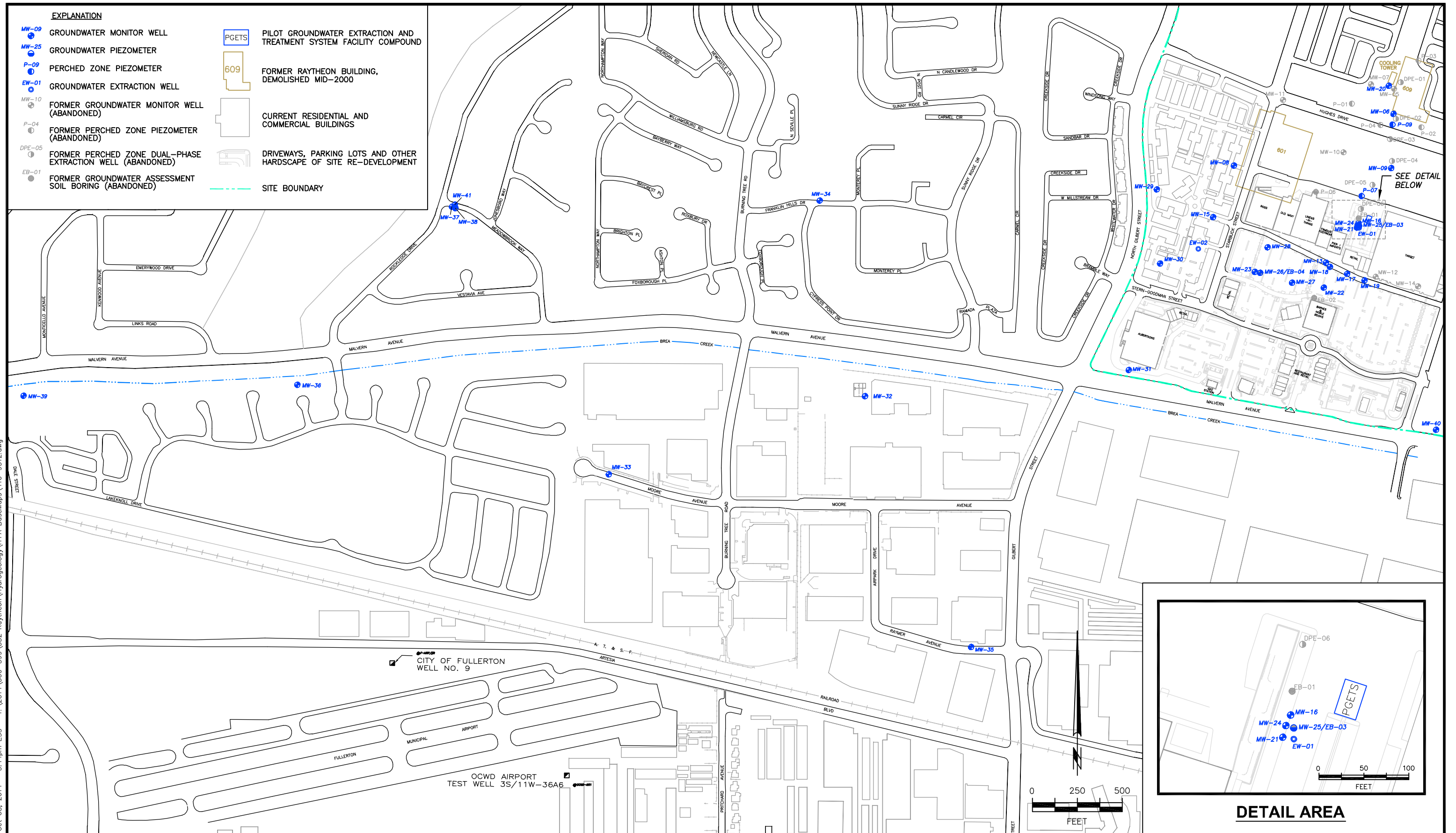


FIGURE 2.
WELL AND PIEZOMETER LOCATIONS

Jun 21, 2016 9:52am ADH - T:\2016\500-599\532 Raytheon\Hydrogeology\Water Lvl\220-2338.dwg

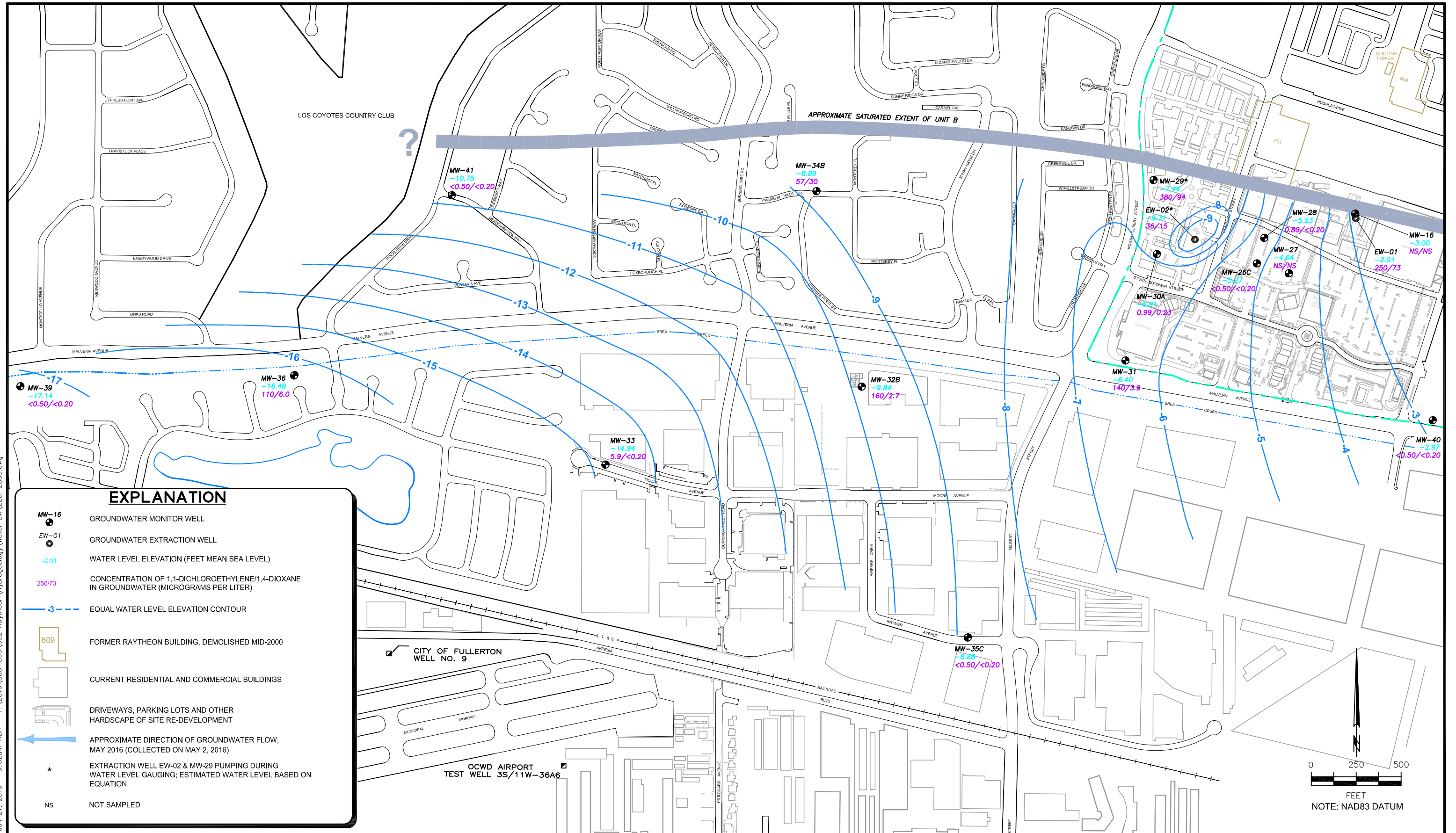


FIGURE 3.
WATER LEVEL AND WATER QUALITY UNIT B
MAY 2016

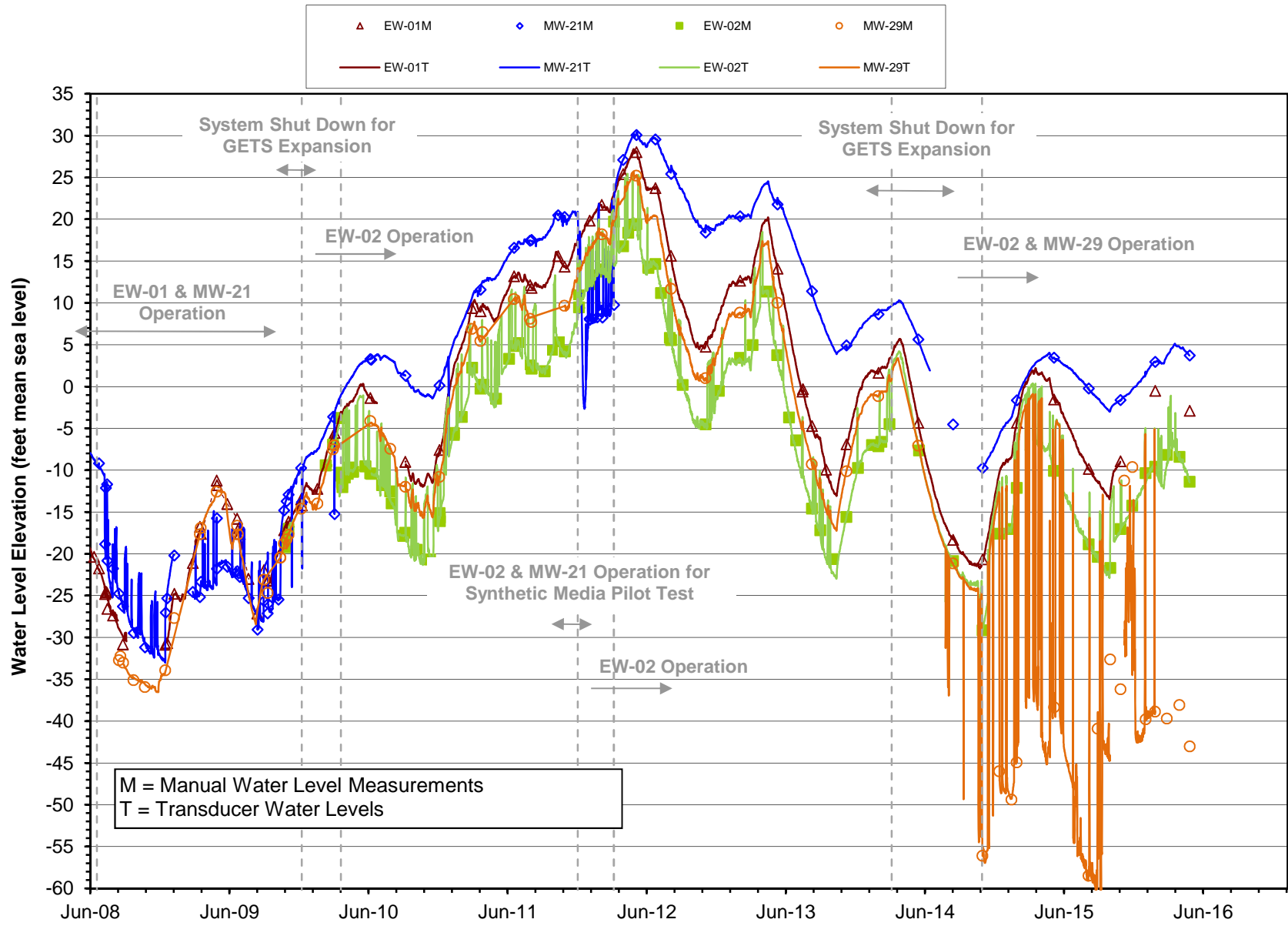


FIGURE 4.
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM OPERATION
AND EXTRACTION WELL WATER LEVELS

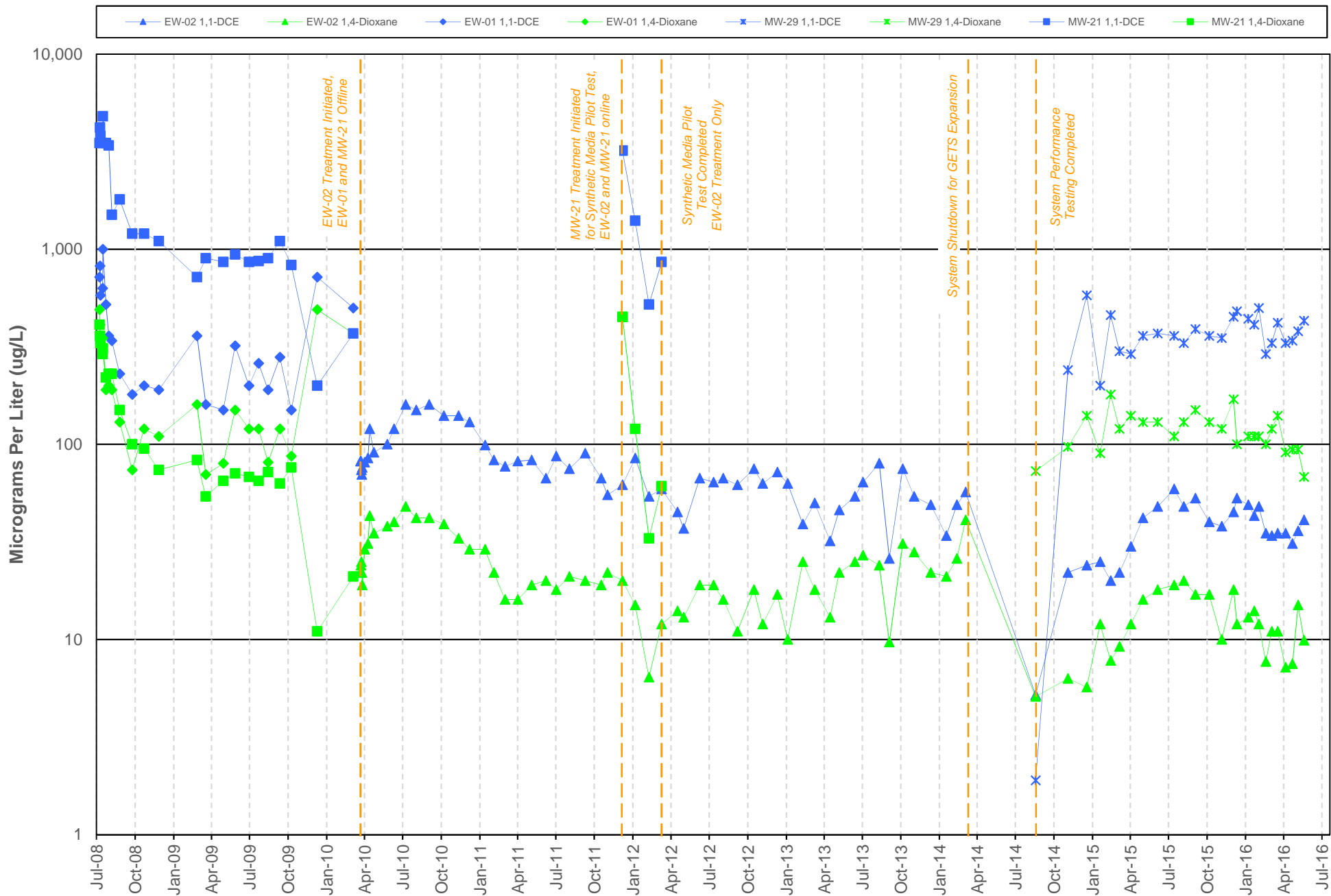


FIGURE 5.
1,1-DICHLOROETHYLENE AND 1,4-DIOXANE CONCENTRATIONS IN EXTRACTION WELLS

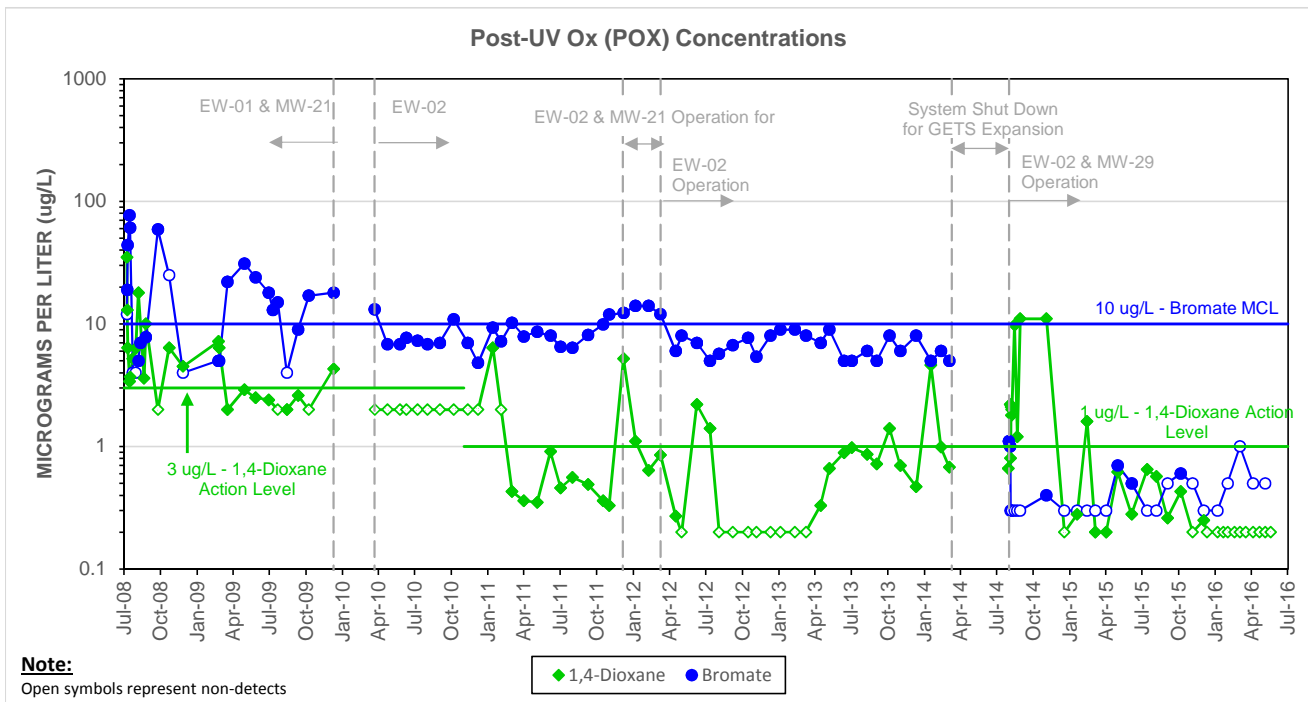
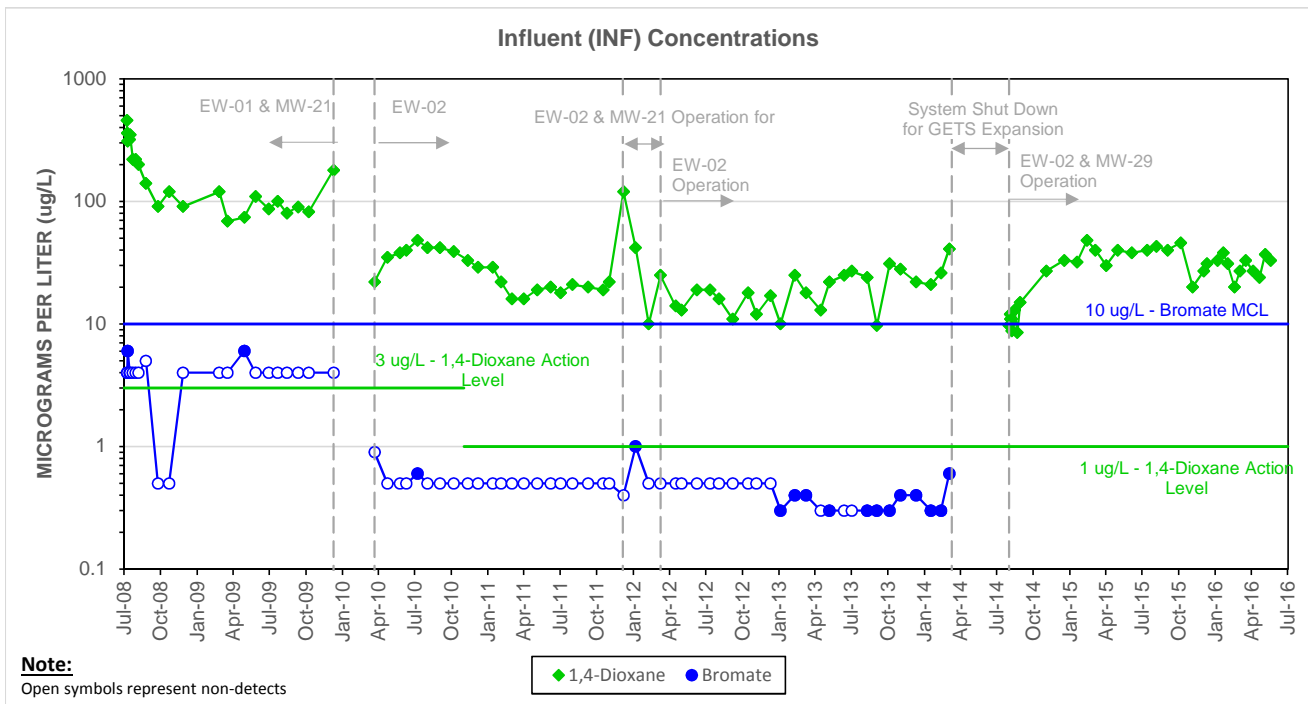


FIGURE 6.
1,4-DIOXANE AND BROMATE IN INFLUENT AND POST-OXIDATION SAMPLES

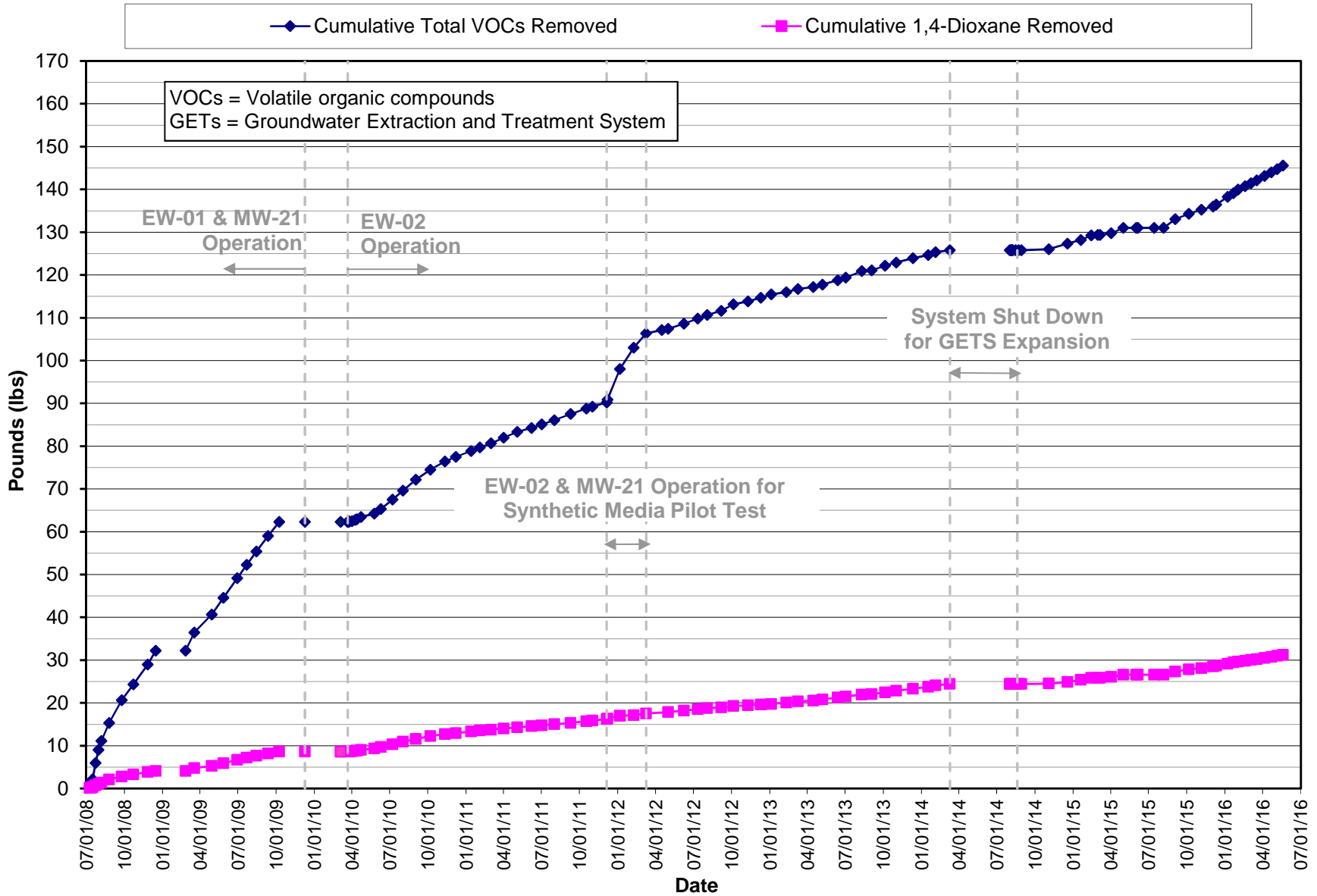


FIGURE 7.
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM MASS REMOVAL

APPENDIX A
GROUNDWATER SAMPLING FIELD FORMS

GROUNDWATER SAMPLING INFORMATION

DATE: 5 / 2 / 2010

TASK: 532.30

WELL ID: MN-21

Time <u>110</u> Static DTW (ft below reference point)	<u>137.67</u>	Casing Volume (CV) (gallons) <u>103</u> 3 CV (gallons) <u>189</u>	Weather Conditions	Initials: <u>ASF/ETH</u>
Casing Total Depth (ft below reference point)	<u>232</u>	Purging Device <u>ded. pump</u> Sampling Device <u>ded. sample point</u>	Time <u>1110</u> Temp. <u>65°F</u>	Begin Purge <u>1115</u> End Purge <u>1130</u>
Water Column (feet)	<u>94.33</u>	Pump: Depth (ft brp) <u>N/A</u> Type _____ Voltage _____ HP _____	Skies <u>CLEAR</u>	Gallons Purged <u>310</u> CVs Purged <u>4.92</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot)	<u>0.106</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>0.5</u> From <u>E</u>	DTW (ft brp) <u>145+</u> Time <u>1130</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)		
1115	137.67	0	0	PUMP ON						-	TDT = 562883 Q ≈ 20 gpm
1116	149.90	19	0.30	22.4	7.28	2015	-10.0	1.21	31.8	-	TDT = 562902 Q ≈ 20 gpm
1119	150.60	49 ⁶⁸	0.77 ^{1.08}	22.3	7.39	2071	-6.6	1.12	9.81	-	TDT = 562951 Q ≈ 20 gpm
1121	150.72 ¹⁵⁷	111	1.76	22.9	7.40	2056	2.6	1.75	5.49	-	TDT = 562994 Q ≈ 20 gpm
1124	151.02	173	2.75	22.3	7.31	2048	43.8	2.37	4.48	-	TDT = 563056 Q ≈ 20 gpm
1125	151.15	210	3.33	23.6	7.36	2041	15.2	2.11	4.94	-	TDT = 563093 Q ≈ 20 gpm; SAMPLE
1130	145.00 ^{+RISING}	310	4.92	PUMP OFF						-	TDT = 563193

SAMPLE COLLECTION SAMPLE TIME <u>1125</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>9</u> 40 ml VOA	<u>MS/MSD COLLECTED</u>			
8270 SIM 1.4 dioxane <u>2</u> 1 L Amber	<u>TB-090216 COLLECTED @ 1110</u>			
8270 MOD 1.4 dioxane <u>2</u> 1 L Amber				
DUPLICATES / SPLITS / BLANKS <u>(Y)</u> N				

GROUNDWATER SAMPLING INFORMATION

DATE: 5 / 2 / 2010

TASK: 532.30

WELL ID: EW-01

Time <u>1133</u> Static DTW (ft below reference point) <u>143.93</u>	Casing Volume (CV) (gallons) <u>29</u> 3 CV (gallons) <u>87</u>	Weather Conditions	Initials: <u>ASF/EJH</u>
Casing Total Depth (ft below reference point) <u>188</u>	Purging Device <u>ded. pump</u> Sampling Device <u>ded. sample point</u>	Time <u>1135</u> Temp. <u>70°F</u>	Begin Purge <u>1138</u> End Purge <u>1154</u>
Water Column (feet) <u>44.07</u>	Pump: Depth (ft brp) <u>NA</u> Type _____ Voltage _____ HP _____	Skies <u>CLEAR</u>	Gallons Purged <u>112</u> CVs Purged <u>386</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>0-5</u> From <u>E</u>	DTW (ft brp) <u>144.09</u> Time <u>1154</u>

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)		
1138	143.93	0	0	—	—	—	—	—	—	—	Q ≈ 7gpm
1140	144.45	14	0.50	22.8	7.43	1374	78.2	6.24	0	—	↓
1142	144.48	28	0.97	21.9	7.44	1305	103.1	7.21	0	—	↓
1144	144.57	42	1.45	22.7	7.43	1354	114.1	7.42	0	—	↓
1146	144.57	56	1.93	22.0	7.42	1303	117.1	7.56	0	—	↓
1148	144.57	70	2.41	22.5	7.43	1308	111.4	7.22	0	—	↓
1151	144.61	91	3.14	22.5	7.43	1349	104.6	7.01	0	—	↓ i SAMPLE
1154	144.09	112	3.80	—	—	—	—	—	—	—	—

SAMPLE COLLECTION SAMPLE TIME <u>1151</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 <u>1</u> 1 L Amber				
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>(N)</u>				

GROUNDWATER SAMPLING INFORMATION

DATE: 5 / 3 / 2016

TASK: 532.30

WELL ID: MW-35C

Time <u>0815</u> Static DTW (ft below reference point) <u>103.12</u>	Casing Volume <u>37</u> (gallons) <u>378</u> <u>3</u> (gallons) <u>1134</u>	Weather Conditions	Initials: <u>AGF/EJH</u>
Casing Total Depth (ft below reference point) <u>1040</u>	Purging Device <u>ded. pump</u> Sampling Device <u>NIS pipe stand</u>	Time <u>0815</u> Temp. <u>65°F</u>	Begin Purge <u>0828</u> End Purge <u>0951</u>
<u>SCREEN</u> Water Column (feet) <u>630</u>	Pump: Depth (ft brp) <u>410</u> Type <u>Grundfos</u> Voltage _____ HP _____	Skies <u>CLEAR</u>	Gallons Purged <u>1159</u> CVs Purged <u>3.07</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot) <u>0.66</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>0-5</u> From <u>NE</u>	DTW (ft brp) <u>103.07</u> Time <u>0951</u>

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)		
0828	103.12	0	0	PUMP ON							
0832	105.82	37	0.10	20.3	7.34	1.01	99.7	2.07	2.34	-	Q ≈ 12.5 gpm
0850	105.80	292	0.77	20.6	7.39	1.01	117.3	2.00	18.1	-	Q ≈ 12.5 gpm
0907	105.75	545	1.44	20.7	7.59	0.82	95.8	3.81	1.94	-	Q ≈ 12.5 gpm
0923	105.72	756	2.00	20.7	7.58	0.82	104.4	3.89	2.46	-	Q ≈ 13.0 gpm
0938	105.66	978	2.59	20.7	7.59	0.82	102.4	3.93	3.30	-	Q ≈ 14 gpm
0949	105.64	1134	3.00	20.7	7.61	0.82	101.0	3.95	0.37	-	SAMPLE
0951	103.07	1159	3.07	PUMP OFF							

SAMPLE COLLECTION SAMPLE TIME <u>0950</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.)			
8280B VOCs <u>93</u> 40 ml VOA	<u>NG/MSD COLLECTED</u>			
8270 SIM 1.4 dioxane <u>31</u> 1 L Amber				
8270 MOD 1.4 dioxane <u>0</u> 1 L Amber				
DUPLICATES / SPLITS / BLANKS? Y <u>(N)</u>				

GROUNDWATER SAMPLING INFORMATION

DATE: 5 / 3 / 2010

TASK: 532.30

WELL ID: MW-30

Time <u>1010</u> Static DTW (ft below reference point) <u>102.67</u>	Casing Volume ^{SV} (gallons) <u>320</u>	^{SV} 30V (gallons) <u>9101</u>	Weather Conditions	Initials: <u>ASF/ESH</u>
Casing Total Depth (ft below reference point) <u>994</u>	Purging Device <u>ded. Pump</u>	Sampling Device <u>7100 Type stand</u>	Time <u>1010</u> Temp. <u>75°F</u>	Begin Purge <u>1010</u> End Purge <u>1151</u>
Water Column (feet) <u>534</u>	Pump: Depth (ft brp) <u>400</u> Type <u>Grundfos</u> Voltage <u>240</u> HP		Skies <u>CLEAR</u>	Gallons Purged <u>988</u> CVs Purged <u>3.09</u>
^{SV} Casing Capacity (Diameter <u>4"</u>) (gallons per foot) <u>0.100</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>		Wind (mph) <u>0-5</u> From <u>W</u>	DTW (ft brp) <u>103.33</u> Time <u>1151</u>

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)		
1010	102.67	0	0								Q ≈ 10 gpm
1018	104.95	20	0.06	20.6	7.66	1.04	134.8	4.70	0.28		Q ≈ 10 gpm
1029	105.10	126	0.39	21.0	7.68	0.99	-69.3	0.40	0.16		Q ≈ 10 gpm
1040	105.20	243	0.76	21.5	7.73	0.84	-93.3	0.27	0.15		Q ≈ 10 gpm
1048	105.28	330	1.03	21.8	7.78	0.73	-101.5	0.34	0.50		Q ≈ 10 gpm
1109	105.49	546	1.71	21.9	7.62	1.04	-96.4	0.31	0.45		Q ≈ 10 gpm
1130	105.50	768	2.40	21.9	7.62	1.10	-101.9	0.14	0.83		Q ≈ 10 gpm
1150	105.55	961	3.00	21.9	7.59	1.12	-109.3	0.16	0.08		Q ≈ 10 gpm; SAMPLE
1151	103.33	988	3.09								PUMP OFF

SAMPLE COLLECTION SAMPLE TIME: <u>1050</u> <u>1150</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>12</u> 40 ml VOA	<u>MW-e DUPLICATE = MW-3000 @ 1200</u>			
8270 SIM 1.4 dioxane <u>4</u> 1 L Amber	<u>SPLIT = MW-30 @ 1150</u>			
8270 MOD 1.4 dioxane <u>0</u> 1 L Amber	<u>1 FAST SCREEN VOLUME = MW-30-15V @ 1050</u>			
<input type="checkbox"/> DUPLICATES <input type="checkbox"/> SPLITS <input type="checkbox"/> BLANKS? If yes, complete appropriate forms.	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N			

GROUNDWATER SAMPLING INFORMATION

DATE: 5 / 3 / 2010

TASK: 532.30

WELL ID: MW-39

Time <u>1205</u> Static DTW (ft below reference point) <u>101.30</u>	Casing Volume (CY) <u>271</u> (gallons) <u>SV</u>	Weather Conditions	Initials: <u>ASF/EJH</u>
Casing Total Depth (ft below reference point) <u>1020</u>	Purging Device <u>ded pump</u> Sampling Device <u>pipestand</u>	Time <u>1205</u> Temp. <u>80°F</u>	Begin Purge <u>1206</u> End Purge _____
Water Column (feet) <u>452</u>	Pump: Depth (ft brp) <u>500</u> Type <u>granite</u> Voltage _____ HP _____	Skies <u>CLEAR</u>	Gallons Purged _____ CVs Purged _____
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>0-5</u> From <u>SW</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 (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1206	101.30	Ø	Ø	—	PUMP ON						
1207	110.10	15	0.06	20.5	8.75	0.436	-61.5	4.81	0.23	—	Q ≈ 15 gpm
1219	110.85	130	0.47	22.0	9.03	0.431	-190.9	0.01	0.33	—	Q ≈ 13 gpm
1232	110.86	367	1.35	22.6	9.13	0.430	-188.0	0.01	1.04	—	Q ≈ 14 gpm
1243	111.00	498	1.84	22.6	8.90	0.434	-189.5	0.01	1.46	—	Q ≈ 12 gpm
1256	111.08	700	2.58	22.6	8.78	0.436	-187.6	0.01	Ø	—	Q ≈ 13 gpm
1304	111.19	814	3.00	22.6	8.77	0.438	-186.3	0.01	0.42	—	SAMPLE
1306	105.10	825		—	PUMP OFF						

SAMPLE COLLECTION SAMPLE TIME <u>1305</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.)			
8280B VOCs <u>3</u> 40 ml VOA				
8270 SIM 1.4 dioxane <u>1</u> 1 L Amber				
8270 MOD 1.4 dioxane <u>Ø</u> 1 L Amber				
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>(N)</u>				

GROUNDWATER SAMPLING INFORMATION

DATE: 5 / 3 / 2010

TASK: 532.30

WELL ID: MW-33

Time <u>1330</u> Static DTW (ft below reference point)	<u>98.15</u>	Casing Volume ^{SCREEN SV} (gallons) <u>291</u>	3 SV (gallons) <u>873</u>	Weather Conditions		Initials: <u>ASF/EHT</u>
Casing Total Depth (ft below reference point)	<u>1020</u>	Purging Device <u>ded. pump</u>	Sampling Device <u>0-10 pipe stand</u>	Time <u>1330</u>	Temp <u>80°F</u>	Begin Purge <u>1334</u> End Purge _____
Water Column (feet)	<u>485</u>	Pump: Depth (ft brp) <u>535</u> Type <u>groundfis</u> Voltage <u>240</u> HP		Skies <u>CLEAR</u>		Gallons Purged _____ CVs Purged _____
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>0-5</u> From <u>SW</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 (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
<u>1334</u>	<u>98.15</u>	<u>0</u>	<u>0</u>	<u>PUMP ON</u>						<u>-</u>	
<u>1336</u>	<u>99.40</u>	<u>24</u>	<u>0.08</u>	<u>19.8</u>	<u>7.71</u>	<u>0.71</u>	<u>-38.6</u>	<u>0.10</u>	<u>0.10</u>	<u>-</u>	<u>Q ≈ 10 gpm</u>
<u>1350</u>	<u>99.40</u>	<u>101</u>	<u>0.55</u>	<u>20.8</u>	<u>7.74</u>	<u>0.70</u>	<u>-99.7</u>	<u>0.22</u>	<u>1.03</u>	<u>-</u>	<u>Q ≈ 10 gpm</u>
<u>1403</u>	<u>99.40</u>	<u>302</u>	<u>1.04</u>	<u>21.0</u>	<u>7.82</u>	<u>0.70</u>	<u>-102.8</u>	<u>0.24</u>	<u>0.40</u>	<u>-</u>	<u>Q ≈ 10 gpm</u>
<u>1422</u>	<u>99.98</u>	<u>500</u>	<u>1.72</u>	<u>21.1</u>	<u>7.71</u>	<u>0.70</u>	<u>-93.5</u>	<u>0.61</u>	<u>0.14</u>	<u>-</u>	<u>Q ≈ 10 gpm</u>
<u>1441</u>	<u>99.48</u>	<u>709</u>	<u>2.44</u>	<u>21.1</u>	<u>7.71</u>	<u>0.70</u>	<u>-88.3</u>	<u>0.62</u>	<u>0.27</u>	<u>-</u>	<u>Q ≈ 10 gpm</u>
<u>1458</u>	<u>99.50</u>	<u>876</u>	<u>3.01</u>	<u>21.1</u>	<u>7.70</u>	<u>0.70</u>	<u>-84.2</u>	<u>0.64</u>	<u>0.18</u>	<u>-</u>	<u>SAMPLE</u>
<u>1459</u>	<u>98.62</u>	<u>889</u>	<u>3.05</u>	<u>PUMP OFF</u>						<u>-</u>	

SAMPLE COLLECTION SAMPLE TIME <u>1405-1500</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>1/2</u> 40 ml VOA	<u>SAMPLE TAKEN AFTER 1 SCREEN VOLUME => MW-33-15V @ 1405</u>			
8270 SIM 1,4 dioxane <u>1/2</u> 1 L Amber				
8270 MOD 1,4 dioxane <u>1/2</u> 1 L Amber				
DUPLICATES / SPLITS / BLANKS? Y <u>(N)</u>				

GROUNDWATER SAMPLING INFORMATION

DATE: 5 / 3 / 2010

TASK: 532.30

WELL ID: MW-37

Time 1520	Static DTW (ft below reference point) 154.10	Casing Volume (CV) (gallons) 180	3 CV (gallons) 540	Weather Conditions		Initials: ASF/EJH
Casing Total Depth (ft below reference point) 820	Purging Device ded pump	Sampling Device NP Pipestand	Time 1520	Temp 80°F	Begin Purge 1520	End Purge 1611
Water Column (feet) 300	Pump: Depth (ft brp) 520	Type ground fis	Voltage 240	HP	Gallons Purged 504	CVs Purged 3.13
Casing Capacity (Diameter 4") (gallons per foot) 0.60	Monitor Well Recharge Rate: Slow	Fast X	Wind (mph) 0-5	From SW	DTW (ft brp) 154.22	Time 1611

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)		
1520	154.10	0	0	PUMP ON						1	
1527	157.20	19	0.11	21.9	7.70	0.83	13.6	0.09	3.93	-	Q ≈ 13 gpm
1535	157.30	108	0.60	22.6	7.80	0.79	-68.3	0.10	2.24	-	↓
1543	157.33	201	1.12	22.9	7.85	0.77	-70.8	0.06	18.3	-	
1551	157.38	307	1.71	23.0	7.82	0.76	-69.3	0.36	7.7	-	
1559	157.39	411	2.28	23.0	7.80	0.80	-62.3	0.33	5.54	-	
1610	157.39	543	3.02	23.0	7.79	0.81	-54.2	0.39	4.27	-	SAMPLE
1611	154.22	504	3.13	PUMP OFF						1	

SAMPLE COLLECTION SAMPLE TIME 1610	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.)			
8280B VOCs 3 40 ml VOA				
8270 SIM 1.4 dioxane 1 1 L Amber				
8270 MOD 1.4 dioxane 0 1 L Amber				
DUPLICATES / SPLITS / BLANKS? Y N				

GROUNDWATER SAMPLING INFORMATION

DATE: 5 / 4 / 2010

TASK: 532.30

WELL ID: MW-32B

Time <u>0810</u> Static DTW (ft below reference point) <u>102.75</u>	Casing Volume (CV) (gallons) <u>2104</u> 3 CV (gallons) <u>791</u>	Weather Conditions	Initials: <u>ASF/EJH</u>
Casing Total Depth (ft below reference point) <u>999</u>	Purging Device <u>ded. pump</u> Sampling Device <u>>100' dia. pipe string</u>	Time <u>0810</u> Temp. <u>45.0°F</u>	Begin Purge <u>0811</u> End Purge <u>0930</u>
Water Column (feet) <u>436</u>	Pump: Depth (ft brp) <u>500</u> Type <u>annular</u> Voltage _____ HP _____	Skies <u>OVERCAST</u>	Gallons Purged <u>804</u> CVs Purged _____
Casing Capacity (Diameter <u>4"</u>) (gallons per foot) <u>0.100</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>-</u> From <u>N/A</u>	DTW (ft brp) <u>111+</u> Time <u>0930</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)		
0811	102.75	0	0	PUMP ON						1	
0812	112.81	10	0.04	21.3	7.61	858	-130.9	1.77	1.94	-	Q ≈ 10 gpm
0825	115.71	127	0.48	20.9	7.85	885	-134.3	0.41	1.88	-	Q ≈ 9 gpm
0838	116.10	287	1.09	21.2	7.89	717	-103.4	0.62	1.97	-	Q ≈ 10 gpm
0855	116.40	414	1.57	21.3	7.66	975	-124.3	1.19	0.67	-	Q ≈ 10 gpm
0908	116.55	554	2.09	21.4	7.72	974	-123.5	1.29	0.91	-	Q ≈ 10 gpm
0920	116.65	650	2.46	21.3	7.78	967	-12.7	1.33	0.52	-	Q ≈ 9 gpm
0935	116.73	791	300	21.3	7.80	975	-119.3	1.35	0.66	-	SAMPLE
0930	111+	804		PUMP OFF						1	

SAMPLE COLLECTION SAMPLE TIME <u>0935</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.)			
8280B VOCs <u>0</u> 40 ml VOA	<u>SAMPLE TAKEN @ 4 SCREEN VOLUME = MW-32B-1SV @ 0840</u>			
8270 SIM 1.4 dioxane <u>2</u> 1 L Amber				
8270 MOD 1.4 dioxane <u>0</u> 1 L Amber				
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>(N)</u>				

GROUNDWATER SAMPLING INFORMATION

DATE: 5 / 3 / 16

TASK: 532.30

WELL ID: MW-28

Time 8:21 Static DTW (ft below reference point) 146.01	Screen Casing Volume (CV) (gallons) 27	3.0V (gallons) 81	Weather Conditions	Initials: TJE/KDF
Casing Total Depth (ft below reference point) 375	Purging Device ded pump	Sampling Device ded 0-10	Time 0820 Temp. 75	Begin Purge 8:28 End Purge 8:43
Water Column (feet) 45	Pump: Depth (ft brp) 330	Type ground for Voltage 240 HP	Skies clear	Gallons Purged 96.9 CVs Purged 36
Casing Capacity (Diameter 4") (gallons per foot) 0.66	Monitor Well Recharge Rate: Slow	Fast X	Wind (mph) 0 From	DTW (ft brp) 149.15 Time 8:43

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)		
8:28	146.01	0	0								Q ≈ 6.5 gpm
8:30	152.05	11.5	0.4	21.5	7.36	1129	251.3	5.34	0.42	-	
8:32	152.47	31.8	1.2	21.6	7.38	1140	105.8	4.50	2.64	-	
8:34	152.53	45.1	1.7	21.6	7.38	1160	128.2	4.87	2.6	-	
8:36	152.53	56.2	2.1	21.7	7.39	1151	134.5	4.98	1.81	-	
8:38	152.53	66.2	2.5	21.7	7.41	1131	137.3	4.88	1.64	-	
8:40	152.53	80.4	3.0	21.7	7.42	1158	134.5	4.89	1.61	-	
8:43	149.15	96.9	3.6								pump off

SAMPLE COLLECTION SAMPLE TIME 842	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	plug needs replacing soon			
8270 SIM 1.4 dioxane 1 1 L Amber				
8270 MOD 1.4 dioxane 1 1 L Amber				
DUPLICATES / SPLITS / BLANKS? Y (N)				

GROUNDWATER SAMPLING INFORMATION

DATE: 5/3/16

TASK: 532.30

WELL ID: MW-34B

Time <u>901</u> Static DTW (ft below reference point) <u>162.00</u>	Casing Volume (CV) (gallons) <u>46</u> 3 CV (gallons) <u>138</u>	Weather Conditions	Initials: <u>TSE/KDF</u>
Casing Total Depth (ft below reference point) <u>536</u>	Purging Device <u>ded pump</u> Sampling Device <u>2100 pipette</u>	Time <u>900</u> Temp. <u>75</u>	Begin Purge <u>9:07</u> End Purge <u>9:29</u>
<u>Pump screen</u> Water Column (feet) <u>76</u>	Pump: Depth (ft brp) <u>460</u> Type <u>grinder</u> Voltage <u>240</u> HP	Skies <u>clear</u>	Gallons Purged <u>239.1</u> CVs Purged <u>5.2</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot) <u>0.66</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>	Wind (mph) <u>0</u> From <u>-</u>	DTW (ft brp) <u>162.41</u> Time <u>9:29</u>

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)			
9:07	162.00	0	0									
												begin purge →
9:09	163.35	20.7	0.45	21.2	7.45	988	1935	3.08	22.3	-		Q ≈ 10 gpm
9:11	163.50	37.0	0.8	21.8	7.48	1002	57.4	3.91	22.3	-		
9:13	163.52	64.1	1.4	21.9	7.49	1000	60.7	5.17	39	-		
9:15	163.60	84.7	1.8	21.9	7.50	1003	4.1	3.66	24.9	-		
9:17	163.71	113.9	2.48	21.9	7.50	1008	14.6	4.25	11.9	-		Q ≈ 12 gpm
9:19	163.74	142.9	3.1	22.0	7.50	1009	10.6	3.86	13.9	-		
9:21	163.75	155.9	3.4	22.0	7.49	1010	17.8	4.06	10.5	-		
9:23	163.78	180.2	3.9	22.0	7.49	1010	15.9	3.90	16.0	-		
9:29	162.41	239.1	5.2									
												pump off

SAMPLE COLLECTION SAMPLE TIME <u>925</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>9</u> 40 ml VOA	<u>SPL17 - MW-34B @ 925</u>			
8270 SIM 1.4 dioxane <u>1</u> 1 L Amber	<u>Dup - MW-3400B @ 930</u>			
8270 MQD 1.4 dioxane <u>3</u> 1 L Amber				
DUPLICATES / SPLITS / BLANKS? <u>(Y)</u> N				

GROUNDWATER SAMPLING INFORMATION

DATE: 5/3/16

TASK: 532.30

WELL ID: MW-38

Time <u>1000</u> Static DTW (ft below reference point) <u>161.48</u>	Casing Volume (CV) (gallons) <u>25</u> 3 CV (gallons) <u>75</u>	Weather Conditions	Initials: <u>TJE/KDF</u>
Casing Total Depth (ft below reference point) <u>200</u>	Purging Device <u>ded pump</u> Sampling Device <u>ND pipe stand</u>	Time <u>1000</u> Temp. <u>78</u>	Begin Purge <u>10:06</u> End Purge <u>10:30</u>
Water Column (feet) <u>38.5</u>	Pump: Depth (ft brp) <u>190</u> Type <u>grundfos</u> Voltage <u>240</u> HP	Skies <u>clear</u>	Gallons Purged <u>80.4</u> CVs Purged <u>32</u>
Casing Capacity (Diameter <u>4</u> ") (gallons per foot) <u>266</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>0</u> From _____	DTW (ft brp) <u>161.59</u> Time <u>10:30</u>

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)		
10:06	161.48	0	0	-	begin	pumping	-	-	-	-	Q ≈ 4 gpm 3.5 gpm
10:09	161.83	11.0	0.44	21.9	7.29	1284	-25.8	4.84	24.3	-	
10:12	161.82	21.1	0.28	22.1	7.32	1267	-0.4	2.06	2.69	-	
10:15	161.83	31.2	1.2	22.2	7.33	1258	1.1	1.76	2.64	-	
10:18	161.84	40.2	1.6	22.2	7.33	1243	-2.0	1.60	1.62	-	
10:21	161.86	51.7	2.1	22.2	7.33	1230	-3.6	1.53	2.07	-	
10:25	161.84	63.5	2.5	22.2	7.33	1225	-2.7	1.49	2.01	-	
10:29	161.86	75.2	3.0	22.2	7.32	1230	-2.1	1.49	2.06	-	
10:30	161.59	80.4	3.2	-	end	purge	-	-	-	-	

SAMPLE COLLECTION SAMPLE TIME <u>1030</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.)			
8280B 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: 5/3/16

TASK: 532.30

WELL ID: MW-41

Time <u>1030</u> Static DTW (ft below reference point)	<u>166.3</u>	Screen Casing Volume (CV) (gallons) <u>39</u>	<u>SV</u> (gallons) <u>118</u>	Weather Conditions	Initials: <u>TJE/KDF</u>
Casing Total Depth (ft below reference point)	<u>425</u>	Purging Device <u>ded pump</u>	Sampling Device <u>10-100 Pipe stand</u>	Time <u>1035</u> Temp. <u>78</u>	Begin Purge <u>1041</u> End Purge <u>1108</u>
<u>pump screen</u> Water Column (feet)	<u>65</u>	Pump: Depth (ft brp) <u>360</u> Type <u>groutless</u> Voltage <u>240</u> HP		Skies <u>clear</u>	Gallons Purged <u>1888</u> CVs Purged <u>98</u>
Casing Capacity (Diameter ⁴) (gallons per foot)	<u>0.66</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>		Wind (mph) <u>2</u> From <u>W</u>	DTW (ft brp) <u>170.69</u> Time <u>1108</u>

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)		
10:41	166.3	0	0			← begin purge →			-	Q ≈ 7 gpm	
10:44	174.29	16.6	0.4	21.7	7.05	2057	58.8	1.66	23.4	-	
10:47	174.59	39.0	1.0	22.2	7.01	2089	-4.4	2.57	180	-	
10:50	174.65	58.5	1.5	22.2	6.98	2039	48.8	4.17	298	-	
10:53	174.72	78.0	2.0	22.3	6.99	2077	54.3	3.86	243	-	
10:55	174.73	97.5	2.5	22.3	6.98	2128	58.6	3.97	144	-	
10:58	174.74	118	3.0	22.3	6.99	2135	56.1	3.73	97	-	
11:00	175.10	139.2	3.6	22.2	6.98	2119	53.6	3.88	53.2	-	
11:02	175.05	154.2	4.0	22.3	6.98	2113	58.1	3.81	37.6	-	
11:05	174.90	177.2	4.5	22.3	6.98	2143	52.4	3.90	29.8	-	
11:07	174.95	188.8	4.8	22.3	6.98	2135	56.2	3.88	31.2	-	pump off @ 1108

SAMPLE COLLECTION TIME <u>1107</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? Y <u>(N)</u>	

GROUNDWATER SAMPLING INFORMATION

DATE: 5/3/16 142.49

TASK: 532.30

WELL ID: MW-26C

Time <u>1215</u> Static DTW (ft below reference point) <u>142.59</u>	Casing Volume (CV) (gallons) <u>60.1</u> 3 CV (gallons) <u>180.3</u>	Weather Conditions	Initials: <u>TJE/KDF</u>
Casing Total Depth (ft below reference point) <u>499</u>	Purging Device <u>gru-dfuc</u> Sampling Device <u>ded tubing</u>	Time <u>1215</u> Temp. <u>80</u>	Begin Purge <u>1227</u> End Purge <u>1315</u>
Water Column (feet) <u>350.5</u>	Pump: Depth (ft brp) <u>200</u> Type <u>ground</u> Voltage _____ HP _____	Skies <u>clear</u>	Gallons Purged <u>200</u> CVs Purged <u>33</u>
Casing Capacity (Diameter <u>2</u>) (gallons per foot) <u>0.17</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>2</u> From <u>S</u>	DTW (ft brp) <u>141.89</u> Time <u>1317</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)		
1227	142.49	0	0	begin purge						400	Q ≈ 4 gpm
1230	144.02	12	0.2	22.3	8.76	577	-312.0	NM	8.30	400	
1238	144.16	44	0.7	22.2	8.20	723	-227.4	2.44	11.2	400	Q ≈ 4 gpm
1246	143.89	76	1.3	22.3	7.80	831	-150.3	2.19	3.15	400	
1254	143.95	108	1.8	22.3	7.76	848	-140.2	2.68	2.86	400	
1302	144.08	150	2.3	22.3	7.75	842	-136.2	2.02	1.91	400	Q ≈ 4 gpm
1306	144.11	156	2.6	22.4	7.74	847	-132.9	1.76	1.33	400	
1313	144.15	184	3.0	22.3	7.74	845	-130.2	1.82	1.73	400	
1315	144.17	192	3.2	22.3	7.74	848	-129.9	1.79	2.00	400	
1317	141.89	200	3.3	end purge						400	

SAMPLE COLLECTION SAMPLE TIME <u>1316</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.)			
8280B 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? Y <u>(N)</u>				
If yes, complete appropriate forms.				

GROUNDWATER SAMPLING INFORMATION

DATE: 5, 3, 16

TASK: 532.30

WELL ID: MW-30A

Time <u>1348</u> Static DTW (ft below reference point)	<u>136.34</u> <u>Screen</u>	Casing Volume (CV) (gallons) <u>17.6</u> <u>SV</u>	3 CV (gallons) <u>52.8</u>	Weather Conditions	Initials: <u>TJE/KDF</u>
Casing Total Depth (ft below reference point)	<u>56.4</u>	Purging Device <u>ded pump</u>	Sampling Device <u>ND P. Stand</u>	Time <u>1348</u> Temp. <u>80</u>	Begin Purge <u>1351</u> End Purge <u>1404</u>
<u>PUMP SCREEN</u> Water Column (feet)	<u>44</u>	Pump: Depth (ft brp) <u>520</u> Type <u>groutin</u>	Voltage <u>240</u> HP	Skies <u>p-c</u>	Gallons Purged <u>61.3</u> CVs Purged <u>35</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>5</u> From <u>W</u>	DTW (ft brp) <u>136.62</u> Time <u>1404</u>

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)		
1351	136.34	0	0								Q ≈ 5.75 gpm
1353	138.10	7.6	0.4	22.0	7.66	753	30.3	4.99	1.86	-	
1354	138.20	14.6	0.8	21.4	7.88	767	-140.3	3.57	1.79	-	
1356	138.15	20.2	1.2	21.5	7.76	759	-100.3	3.09	1.81	-	
1357	138.15	31.2	1.8	21.6	7.69	757	-80.2	2.61	1.56	-	
1358	138.16	38.2	2.2	21.8	7.67	751	-76.9	2.28	1.98	-	
1400	138.16	44.3	2.5	21.8	7.66	750	-83.4	2.05	1.33	-	
1401	138.16	49.2	2.8	21.8	7.66	750	-86.0	1.97	1.43	-	
1402	138.18	53	3.0	21.8	7.66	750	-89.	1.99	1.58	-	
1404	136.62	61.3	3.5								

SAMPLE COLLECTION SAMPLE TIME 1403

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? 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: 5, 3, 16

TASK: 532.30

WELL ID: MW-30B

Time <u>1409</u> Static DTW (ft below reference point) <u>133.39</u>	<u>Screen</u> Casing Volume (CV) (gallons) <u>40</u> <u>SV</u> 3 CV (gallons) <u>120</u>	Weather Conditions	Initials: <u>TJE/KDF</u>
Casing Total Depth (ft below reference point) <u>619</u>	Purging Device <u>ded pump</u> Sampling Device <u>10-100 PIR Stand</u>	Time <u>1408</u> Temp. <u>80</u>	Begin Purge <u>1410</u> End Purge <u>1440</u>
<u>pump screen</u> Water Column (feet) <u>99</u>	Pump: Depth (ft brp) <u>520</u> Type <u>groutless</u> Voltage <u>240</u> HP	Skies <u>partly cloudy</u>	Gallons Purged <u>126.4</u> CVs Purged <u>3.2</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>5</u> From <u>W</u>	DTW (ft brp) <u>151.35</u> Time <u>1440</u>

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)		
1410	133.39	0	0								Q _r 4.8 gpm
1414	149.09	18	0.5	21.6	7.77	735	-97.0	1.49	5.15	-	
1418	151.15	33.3	0.87	21.7	8.66	615	-209.6	1.53	2.37	-	
1422	152.95	55.5	1.4	21.8	8.08	702	-156.8	1.77	3.61	-	
1426	153.39	69.0	1.7	21.9	7.47	1269	-39.4	2.84	4.99	-	
1432	154.52	97.8	2.4	21.9	7.45	1254	-17.9	2.95	3.60	-	
1438	154.90	120.5	3.0	21.9	7.46	1258	-25.8	2.97	3.98	-	
1440	151.35	126.4	3.2								pump off

SAMPLE COLLECTION SAMPLE TIME <u>1440</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 <u>1</u> 1 L Amber				
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>(N)</u>				
If yes, complete appropriate forms.				

GROUNDWATER SAMPLING INFORMATION

DATE: 5, 3, 16

TASK: 532.30

WELL ID: MW. 08

Time <u>1452</u> Static DTW (ft below reference point) <u>147.36</u>	Casing Volume (CV) (gallons) <u>2.7</u> 3 CV (gallons) <u>8.1</u>	Weather Conditions	Initials: <u>DE/KDF</u>
Casing Total Depth (ft below reference point) <u>163</u>	Purging Device <u>grundfos</u> Sampling Device <u>ded tubing</u>	Time <u>1453</u> Temp. <u>75</u>	Begin Purge <u>1500</u> End Purge <u>1510</u>
Water Column (feet) <u>15.64</u>	Pump: Depth (ft brp) <u>160</u> Type <u>grundfos</u> Voltage _____ HP _____	Skies <u>overcast</u>	Gallons Purged <u>8.5</u> CVs Purged <u>3.1</u>
Casing Capacity (Diameter <u>2'</u>) (gallons per foot) <u>0.17</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>2</u> From <u>W</u>	DTW (ft brp) <u>153.87</u> Time <u>1511</u>

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)		
1500	147.36	0	0	—	—	begin purge	—	—	285	Q ≈ 1 gpm	
1501	153.6	1	0.4	22.6	7.12	2362	8	—	34.1	285	
1503	—	2.5	0.9	—	—	—	—	—	—	—	pump stopped
1504	153.95	3	1.1	22.8	7.83	2347	—	—	37.8	285	pump on
1505	154.44	3.5	1.3	23.2	7.32	2335	—	—	27.2	285	
1506	155.32	4.25 5	2.0	23.5	7.31	2319	—	—	26.5	285	
1507	155.80	6	2.2	23.6	7.32	2301	—	—	22.8	285	
1509	156.82	7.5	2.8	23.6	7.32	2292 2313	—	—	24.2	285	
1510	157.74	8.5	3.1	23.6	7.32	2296	—	—	21.3	285	
1510	—	—	—	—	—	pump	off	—	—	—	

SAMPLE COLLECTION SAMPLE TIME <u>1510</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 <u>1</u> 1 L Amber				
DUPLICATES / SPLITS / BLANKS? Y <u>(N)</u>				

GROUNDWATER SAMPLING INFORMATION

DATE: 5, 4, 16

TASK: 532.30

WELL ID: MW-40

Time <u>815</u> Static DTW (ft below reference point) <u>126.80</u>	Casing Volume (CV) (gallons) <u>75</u> ^{Screen} <u>50</u> ^{SU} <u>225</u>	Weather Conditions	Initials: <u>TJE/KDF</u>
Casing Total Depth (ft below reference point) <u>470</u>	Purging Device <u>deed pump</u> Sampling Device <u>ND pipe still</u>	Time <u>815</u> Temp <u>70</u>	Begin Purge <u>8:22</u> End Purge <u>8:53</u>
^{Pump screen} Water Column (feet) <u>50</u>	Pump: Depth (ft brp) <u>470</u> Type <u>grinder</u> Voltage <u>240</u> HP	Skies <u>cloudy</u>	Gallons Purged <u>236</u> CVs Purged <u>32</u>
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>2</u> From <u>E</u>	DTW (ft brp) <u>126.90</u> Time <u>8:53</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	FIELD PARAMETERS						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	m EC (µS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
8:22	126.80	0	0								Q ≈ 8 gpm
8:26	127.58	27.4	0.4	20.5	7.59	0.75	172.6	1.40	3.47		
8:30	127.65	58.6	0.8	20.9	7.32	0.69	—	—	4.62		Using parameter cup
8:35	127.63	92.2	1.3	20.9	7.67	0.73	—	—	0.90		
8:40	127.63	131.2	1.75	21.1	7.66	0.73	—	—	0.01		
8:45	127.64	171.0	2.3	21.1	7.68	0.73	—	—	0.11		
8:51	127.63	225.2	3.0	21.0	7.69	0.72	—	—	0.02		
8:53	126.90	236.5	3.2								end purge

SAMPLE COLLECTION SAMPLE TIME <u>8:52</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 <u>1</u> 1 L Amber				
DUPLICATES / SPLITS / BLANKS? Y <u>(N)</u>				

GROUNDWATER SAMPLING INFORMATION

DATE: 5, 4, 10

TASK: 532.30

WELL ID: MW-31

Time <u>9:21</u> Static DTW (ft below reference point) <u>126.50</u>	Screen Casing Volume (CV) (gallons) <u>81</u> 3 CV (gallons) <u>243</u>	Weather Conditions	Initials: <u>TJE/KDF</u>
Casing Total Depth (ft below reference point) <u>996</u>	Purging Device <u>dal pump</u> Sampling Device <u>>100 PUMP</u>	Time <u>9:22</u> Temp. <u>70</u>	Begin Purge <u>9:27</u> End Purge <u>9:56</u>
<u>Pump Recorder</u> Water Column (feet) <u>54</u>	Pump: Depth (ft brp) <u>942</u> Type <u>grinder</u> Voltage <u>240</u> HP	Skies <u>cloudy</u>	Gallons Purged <u>259.3</u> CVs Purged <u>3.2</u>
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</u> From <u>-</u>	DTW (ft brp) <u>127.20</u> Time <u>9:57</u>

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)		
9:27	126.50	0	0			begin	purge				Q ≈ 10 gpm
9:31	128.90	40.5	0.5	20.9	7.80	0.97	-428	0.34	1.66	-	
9:35	128.91	81	1.0	21.2	7.83	1.17	-50.4	0.32	12.7	-	
9:40	128.92	121.5	1.5	21.3	7.81	0.96	-45.2	0.34	7.21	-	
9:45	128.99	162	2.0	21.4	7.84	0.90	-437	0.39	7.10	-	
9:49	129.01	202.5	2.5	21.4	7.87	0.86	-41.3	0.42	5.70	-	
9:54	129.00	243	3.0	21.4	7.89	0.87	-38.9	0.43	6.10	-	
9:56	129.01	259.3	3.2			end	purge			-	

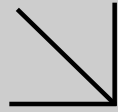
SAMPLE COLLECTION SAMPLE TIME <u>9:55</u>	AIR MONITORING PID/FID ppm: VAULT NA	BKGD NA	BREATHING ZONE NA	DISCHARGE WATER NA
ANALYSIS QUANTITY TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
8260B VOCs <u>3</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? _____ Y <u>(N)</u>				

APPENDIX B
LABORATORY ANALYTICAL REPORTS

GROUNDWATER SAMPLING ANALYTICAL RESULTS



Calscience



WORK ORDER NUMBER: 16-05-0170

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

Approved for release on 05/11/2016 by:
Virendra Patel
Project Manager

ResultLink ▶

Email your PM ▶



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Work Order Number: 16-05-0170

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Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 05/03/16. They were assigned to Work Order 16-05-0170.

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.

Subcontractor Information:

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

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.

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.

Sample Summary

Client: Hargis + Associates, Inc.	Work Order: 16-05-0170
9171 Towne Centre Drive, Suite 375	Project Name: Raytheon Main / 532.30
San Diego, CA 92122-6215	PO Number:
	Date/Time Received: 05/03/16 18:00
	Number of Containers: 10

Attn: Steve Netto

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
TB-050316	16-05-0170-1	05/03/16 08:00	2	Aqueous
MW-34B	16-05-0170-2	05/03/16 09:25	4	Aqueous
MW-36	16-05-0170-3	05/03/16 11:50	4	Aqueous

Detections Summary

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

Work Order: 16-05-0170
 Project Name: Raytheon Main / 532.30
 Received: 05/03/16

Attn: Steve Netto

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Client SampleID

<u>Analyte</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>Units</u>	<u>Method</u>	<u>Extraction</u>
MW-34B (16-05-0170-2)						
1,1-Dichloroethene	80		1.0	ug/L	EPA 8260B	EPA 5030C
1,4-Dioxane	27		1.0	ug/L	EPA 8270C (M) Isotope Dilution	EPA 3510C
MW-36 (16-05-0170-3)						
1,1-Dichloroethene	130		1.0	ug/L	EPA 8260B	EPA 5030C
1,4-Dioxane	7.3		1.0	ug/L	EPA 8270C (M) Isotope Dilution	EPA 3510C

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: 05/03/16
 Work Order: 16-05-0170
 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-34B	16-05-0170-2-D	05/03/16 09:25	Aqueous	GC/MS DDD	05/04/16	05/05/16 10:11	160504L07

Parameter	Result	RL	DF	Qualifiers
1,4-Dioxane	27	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Nitrobenzene-d5	83	56-123	
1,4-Dioxane-d8(IDS-IS)	42	30-120	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-36	16-05-0170-3-D	05/03/16 11:50	Aqueous	GC/MS DDD	05/04/16	05/05/16 10:27	160504L07

Parameter	Result	RL	DF	Qualifiers
1,4-Dioxane	7.3	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Nitrobenzene-d5	83	56-123	
1,4-Dioxane-d8(IDS-IS)	45	30-120	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-16-216-719	N/A	Aqueous	GC/MS DDD	05/04/16	05/05/16 05:54	160504L07

Parameter	Result	RL	DF	Qualifiers
1,4-Dioxane	ND	1.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Nitrobenzene-d5	85	56-123	
1,4-Dioxane-d8(IDS-IS)	43	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: 05/03/16
 Work Order: 16-05-0170
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

Page 1 of 8

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
TB-050316	16-05-0170-1-A	05/03/16 08:00	Aqueous	GC/MS LL	05/04/16	05/04/16 17:03	160504L001

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: 05/03/16
 Work Order: 16-05-0170
 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	84	80-120	
Dibromofluoromethane	110	78-126	
1,2-Dichloroethane-d4	117	75-135	
Toluene-d8	96	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: 05/03/16
 Work Order: 16-05-0170
 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	16-05-0170-2-A	05/03/16 09:25	Aqueous	GC/MS LL	05/04/16	05/04/16 17:56	160504L001

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	80	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: 05/03/16
 Work Order: 16-05-0170
 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	84	80-120	
Dibromofluoromethane	113	78-126	
1,2-Dichloroethane-d4	117	75-135	
Toluene-d8	96	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: 05/03/16
 Work Order: 16-05-0170
 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-36	16-05-0170-3-A	05/03/16 11:50	Aqueous	GC/MS LL	05/04/16	05/04/16 18:22	160504L001

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	130	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: 05/03/16
 Work Order: 16-05-0170
 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	83	80-120	
Dibromofluoromethane	110	78-126	
1,2-Dichloroethane-d4	116	75-135	
Toluene-d8	98	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: 05/03/16
 Work Order: 16-05-0170
 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	099-14-001-20251	N/A	Aqueous	GC/MS LL	05/04/16	05/04/16 10:26	160504L001

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: 05/03/16
 Work Order: 16-05-0170
 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	85	80-120	
Dibromofluoromethane	108	78-126	
1,2-Dichloroethane-d4	112	75-135	
Toluene-d8	95	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: 05/03/16
 Work Order: 16-05-0170
 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
16-05-0141-1	Sample	Aqueous	GC/MS DDD	05/04/16	05/05/16 06:58	160504S07
16-05-0141-1	Matrix Spike	Aqueous	GC/MS DDD	05/04/16	05/05/16 06:26	160504S07
16-05-0141-1	Matrix Spike Duplicate	Aqueous	GC/MS DDD	05/04/16	05/05/16 06:42	160504S07

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	17.92	90	18.66	93	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: 05/03/16
Work Order: 16-05-0170
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
16-05-0184-2	Sample	Aqueous	GC/MS LL	05/04/16	05/04/16 12:14	160504S002
16-05-0184-2	Matrix Spike	Aqueous	GC/MS LL	05/04/16	05/04/16 12:40	160504S002
16-05-0184-2	Matrix Spike Duplicate	Aqueous	GC/MS LL	05/04/16	05/04/16 13:06	160504S002

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	50.56	101	50.01	100	74-122	1	0-21	
Carbon Tetrachloride	ND	50.00	50.78	102	49.51	99	60-144	3	0-21	
Chlorobenzene	ND	50.00	52.75	105	52.66	105	73-120	0	0-22	
1,2-Dibromoethane	ND	50.00	53.68	107	53.17	106	80-122	1	0-20	
1,2-Dichlorobenzene	ND	50.00	54.04	108	55.24	110	70-120	2	0-26	
1,2-Dichloroethane	0.5425	50.00	50.74	100	49.38	98	64-142	3	0-20	
1,1-Dichloroethene	ND	50.00	49.15	98	49.81	100	52-136	1	0-21	
Ethylbenzene	ND	50.00	55.98	112	56.16	112	77-125	0	0-24	
Toluene	ND	50.00	51.73	103	50.81	102	72-126	2	0-23	
Trichloroethene	ND	50.00	51.16	102	50.59	101	74-128	1	0-22	
Vinyl Chloride	ND	50.00	49.58	99	52.26	105	67-133	5	0-20	
p/m-Xylene	ND	100.0	119.6	120	118.9	119	63-129	1	0-25	
o-Xylene	ND	50.00	60.39	121	61.21	122	62-128	1	0-24	
Methyl-t-Butyl Ether (MTBE)	7.465	50.00	51.72	89	52.87	91	68-134	2	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: 05/03/16
 Work Order: 16-05-0170
 Preparation: EPA 3510C
 Method: EPA 8270C (M) Isotope Dilution

Project: Raytheon Main / 532.30

Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-216-719	LCS	Aqueous	GC/MS DDD	05/04/16	05/05/16 06:10	160504L07
<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	19.17	96	50-130	

Quality Control - LCS

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

Date Received: 05/03/16
 Work Order: 16-05-0170
 Preparation: EPA 5030C
 Method: EPA 8260B

Project: Raytheon Main / 532.30

Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number	
099-14-001-20251	LCS	Aqueous	GC/MS LL	05/04/16	05/04/16 09:17	160504L001	
<u>Parameter</u>		<u>Spike Added</u>	<u>Conc. Recovered</u>	<u>LCS %Rec.</u>	<u>%Rec. CL</u>	<u>ME CL</u>	<u>Qualifiers</u>
Benzene		50.00	48.43	97	80-120	73-127	
Carbon Tetrachloride		50.00	47.10	94	67-139	55-151	
Chlorobenzene		50.00	51.31	103	78-120	71-127	
1,2-Dibromoethane		50.00	53.48	107	80-120	73-127	
1,2-Dichlorobenzene		50.00	53.31	107	63-129	52-140	
1,2-Dichloroethane		50.00	49.06	98	70-130	60-140	
1,1-Dichloroethene		50.00	47.59	95	66-126	56-136	
Ethylbenzene		50.00	53.85	108	80-123	73-130	
Toluene		50.00	49.46	99	80-120	73-127	
Trichloroethene		50.00	49.09	98	80-122	73-129	
Vinyl Chloride		50.00	47.80	96	70-130	60-140	
p/m-Xylene		100.0	114.1	114	75-123	67-131	
o-Xylene		50.00	58.21	116	74-122	66-130	
Methyl-t-Butyl Ether (MTBE)		50.00	52.18	104	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: 16-05-0170

Page 1 of 1

<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA 8260B	EPA 5030C	867	GC/MS LL	2
EPA 8270C (M) Isotope Dilution	EPA 3510C	928	GC/MS DDD	1

Glossary of Terms and Qualifiers

Work Order: 16-05-0170

Page 1 of 1

<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.
CI	See case narrative.
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.

PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Steve Netto
QA Manager Erin Hunter
Phone 858.455.6500
Fax 858.455.6533

Sampled By:
T. Evans, K. Fang, E. Hunter & Fuhr

SAMPLE COLLECTION				ANALYSIS REQUESTED													SPECIAL HANDLING		REMARKS				
LAB ID	SAMPLE ID	Date	Time	Groundwater	Lab prepared water	Hydrochloric Acid (HCl)	Ice	40-ml VOA	1 L Amber	VOCs by EPA 5242-8210B	1,4 Dioxane 8270 SIM	1,4-Dioxane 8270 MOD	0 - 10	10 - 100	100 - 1,000	>1,000	24 hr TAT	48 hr TAT		Standard TAT	Level IV Data Validation Requested	MS/MSD Requested	
1	TR-050316	5/3/16	0800	X	X	X	X	2		X													
2	MW-34B		925	X	X	X	X	3		X					X								
3	MW-36		1150	X	X	X	X	3	1	X		X			X								
				X			X		1			X											

Total number of containers per analysis: 8 2 Total No. of Containers: 910

Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<u>EAH HIA</u>	<u>5/3/16 1700</u>	<u>RN ECI</u>	<u>5/3/16 1700</u>
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<u>Rudy ECI</u>	<u>5/3/16 1800</u>	<u>Shave</u>	<u>5/3/16 1800</u>

- No. of containers correct
- Received in good condition
- Custody seals secure
- Conforms to COC document

Send Results to:
Steve Netto
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122
Ph: 858.455.5400
snetto@hargis.com

- Instructions
1. Fill out form completely and sign only after verified for completeness
 2. Complete in ballpoint pen. Draw one line through error, initial and date correction
 3. Indicate the number of sample containers in analytical 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.

____ Temperature on receipt

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: HARGIS + ASSOCIATES, INC

DATE: 05 / 3 / 2016

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

Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 2.3 °C (w/ CF): 2.3 °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

Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: Air Filter

Checked by: 676

CUSTODY SEAL:

Cooler Present and Intact Present but Not Intact Not Present N/A Checked by: 676

Sample(s) Present and Intact Present but Not Intact Not Present N/A Checked by: 1053

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: N/A)

Aqueous: VOA VOA_h VOA_{na2} 100PJ 100PJ_{na2} 125AGB 125AGB_h 125AGB_p 125PB

125PB_z_{na} 250AGB 250CGB 250CGB_s 250PB 250PB_n 500AGB 500AGJ 500AGJ_s

500PB 1AGB 1AGB_{na2} 1AGB_s 1PB 1PB_{na} _____ _____ _____ _____

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

Air: Tedlar™ Canister Sorbent Tube PUF _____ **Other Matrix** (____): _____ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO₃, **na** = NaOH, **na₂** = Na₂S₂O₃, **p** = H₃PO₄, Labeled/Checked by: 1053

s = H₂SO₄, **u** = ultra-pure, **z**_{na} = Zn(CH₃CO₂)₂ + NaOH Reviewed by: 679

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GROUNDWATER SAMPLING ANALYTICAL RESULTS

May 16, 2016

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

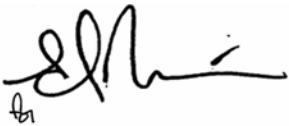
ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1601592
Client Reference : Raytheon Main, 532.30

Enclosed are the results for sample(s) received on May 04, 2016 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,



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 : 05/16/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-050216	1601592-01	Lab prepared water	5/02/16 11:10	5/04/16 12:00
MW-21	1601592-02	Groundwater	5/02/16 11:25	5/04/16 12:00
EW-01	1601592-03	Groundwater	5/02/16 11:51	5/04/16 12:00
MW-35C	1601592-04	Groundwater	5/03/16 9:50	5/04/16 12:00
MW-36_1SV	1601592-05	Groundwater	5/03/16 10:50	5/04/16 12:00
MW-36	1601592-06	Groundwater	5/03/16 11:50	5/04/16 12:00
MW-3600	1601592-07	Groundwater	5/03/16 12:00	5/04/16 12:00
MW-39	1601592-08	Groundwater	5/03/16 13:05	5/04/16 12:00
MW-33_1SV	1601592-09	Groundwater	5/03/16 14:05	5/04/16 12:00
MW-33	1601592-10	Groundwater	5/03/16 15:00	5/04/16 12:00
MW-37	1601592-11	Groundwater	5/03/16 16:10	5/04/16 12:00
MW-32B_1SV	1601592-12	Groundwater	5/04/16 8:40	5/04/16 12:00
MW-32B	1601592-13	Groundwater	5/04/16 9:35	5/04/16 12:00
MW-28	1601592-14	Groundwater	5/03/16 8:42	5/04/16 12:00
MW-34B	1601592-15	Groundwater	5/03/16 9:25	5/04/16 12:00
MW-3400B	1601592-16	Groundwater	5/03/16 9:30	5/04/16 12:00
MW-38	1601592-17	Groundwater	5/03/16 10:30	5/04/16 12:00
MW-41	1601592-18	Groundwater	5/03/16 11:07	5/04/16 12:00
MW-26C	1601592-19	Groundwater	5/03/16 13:16	5/04/16 12:00
MW-30A	1601592-20	Groundwater	5/03/16 14:03	5/04/16 12:00
MW-30B	1601592-21	Groundwater	5/03/16 14:40	5/04/16 12:00
MW-08	1601592-22	Groundwater	5/03/16 15:10	5/04/16 12:00
MW-40	1601592-23	Groundwater	5/04/16 8:52	5/04/16 12:00
MW-31	1601592-24	Groundwater	5/04/16 9:55	5/04/16 12:00



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID TB-050216

Lab ID: 1601592-01

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,1,1-Trichloroethane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,1,2-Trichloroethane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,1-Dichloroethane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,1-Dichloroethene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,1-Dichloropropene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,2,3-Trichloropropane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,2-Dibromoethane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,2-Dichlorobenzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,2-Dichloroethane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,2-Dichloropropane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,3-Dichlorobenzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,3-Dichloropropane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
1,4-Dichlorobenzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
2,2-Dichloropropane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
2-Chlorotoluene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
4-Chlorotoluene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
4-Isopropyltoluene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Benzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Bromobenzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Bromodichloromethane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Bromoform	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Bromomethane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Carbon tetrachloride	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Chlorobenzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Chloroethane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Chloroform	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Chloromethane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Dibromochloromethane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	



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 : 05/16/2016

Client Sample ID TB-050216

Lab ID: 1601592-01

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Dichlorodifluoromethane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Ethylbenzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Hexachlorobutadiene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Isopropylbenzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
m,p-Xylene	ND	1.0	1	B6E0131	05/05/2016	05/05/16 20:57	
Methylene chloride	ND	1.0	1	B6E0131	05/05/2016	05/05/16 20:57	
n-Butylbenzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
n-Propylbenzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Naphthalene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
o-Xylene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
sec-Butylbenzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Styrene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
tert-Butylbenzene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Tetrachloroethene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Toluene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Trichloroethene	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Trichlorofluoromethane	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
Vinyl chloride	ND	0.50	1	B6E0131	05/05/2016	05/05/16 20:57	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>94.7 %</i>	<i>51 - 157</i>		B6E0131	05/05/2016	<i>05/05/16 20:57</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.1 %</i>	<i>61 - 123</i>		B6E0131	05/05/2016	<i>05/05/16 20:57</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>	<i>57 - 147</i>		B6E0131	05/05/2016	<i>05/05/16 20:57</i>	
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>	<i>61 - 119</i>		B6E0131	05/05/2016	<i>05/05/16 20:57</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 : 05/16/2016

Client Sample ID MW-21

Lab ID: 1601592-02

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,1,1-Trichloroethane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,1,2,2-Tetrachloroethane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,1,2-Trichloroethane	11	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,1-Dichloroethane	22	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,1-Dichloroethene	1400	10	20	B6E0147	05/07/2016	05/07/16 00:30	
1,1-Dichloropropene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,2,3-Trichloropropane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,2,3-Trichlorobenzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,2,4-Trichlorobenzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,2,4-Trimethylbenzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,2-Dibromo-3-chloropropane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,2-Dibromoethane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,2-Dichlorobenzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,2-Dichloroethane	3.6	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,2-Dichloropropane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,3,5-Trimethylbenzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,3-Dichlorobenzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,3-Dichloropropane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
1,4-Dichlorobenzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
2,2-Dichloropropane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
2-Chlorotoluene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
4-Chlorotoluene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
4-Isopropyltoluene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Benzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Bromobenzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Bromodichloromethane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Bromoform	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Bromomethane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Carbon tetrachloride	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Chlorobenzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Chloroethane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Chloroform	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Chloromethane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
cis-1,2-Dichloroethene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
cis-1,3-Dichloropropene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Dibromochloromethane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	



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 : 05/16/2016

Client Sample ID MW-21

Lab ID: 1601592-02

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Dichlorodifluoromethane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Ethylbenzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Hexachlorobutadiene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Isopropylbenzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
m,p-Xylene	ND	4.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Methylene chloride	ND	4.0	4	B6E0195	05/11/2016	05/11/16 01:46	
n-Butylbenzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
n-Propylbenzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Naphthalene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
o-Xylene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
sec-Butylbenzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Styrene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
tert-Butylbenzene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Tetrachloroethene	4.1	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Toluene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
trans-1,2-Dichloroethene	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Trichloroethene	20	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Trichlorofluoromethane	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
Vinyl chloride	ND	2.0	4	B6E0195	05/11/2016	05/11/16 01:46	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.5 %</i>	<i>51 - 157</i>		B6E0147	05/07/2016	<i>05/07/16 00:30</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>	<i>51 - 157</i>		B6E0195	05/11/2016	<i>05/11/16 01:46</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.4 %</i>	<i>61 - 123</i>		B6E0147	05/07/2016	<i>05/07/16 00:30</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.7 %</i>	<i>61 - 123</i>		B6E0195	05/11/2016	<i>05/11/16 01:46</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>57 - 147</i>		B6E0195	05/11/2016	<i>05/11/16 01:46</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>	<i>57 - 147</i>		B6E0147	05/07/2016	<i>05/07/16 00:30</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.6 %</i>	<i>61 - 119</i>		B6E0195	05/11/2016	<i>05/11/16 01:46</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0147	05/07/2016	<i>05/07/16 00:30</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 : 05/16/2016

Client Sample ID MW-21

Lab ID: 1601592-02

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	220	2.0	1	B6E0141	05/06/2016	05/10/16 00:31	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>61.2 %</i>	<i>42 - 106</i>		B6E0141	05/06/2016	<i>05/10/16 00:31</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>80.4 %</i>	<i>55 - 117</i>		B6E0141	05/06/2016	<i>05/10/16 00:31</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>115 %</i>	<i>52 - 142</i>		B6E0141	05/06/2016	<i>05/10/16 00:31</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>73.4 %</i>	<i>43 - 116</i>		B6E0141	05/06/2016	<i>05/10/16 00:31</i>	



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Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID EW-01

Lab ID: 1601592-03

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,1,1-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,1,2-Trichloroethane	1.5	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,1-Dichloroethane	3.3	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,1-Dichloroethene	250	5.0	10	B6E0148	05/07/2016	05/07/16 16:56	
1,1-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,2,3-Trichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,2-Dibromoethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,2-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,2-Dichloroethane	0.61	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,3-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,3-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
1,4-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
2,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
2-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
4-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
4-Isopropyltoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Benzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Bromobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Bromodichloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Bromoform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Bromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Carbon tetrachloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Chlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Chloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Chloroform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Chloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Dibromochloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID EW-01

Lab ID: 1601592-03

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Dichlorodifluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Ethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Hexachlorobutadiene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Isopropylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
m,p-Xylene	ND	1.0	1	B6E0148	05/07/2016	05/07/16 19:55	
Methylene chloride	ND	1.0	1	B6E0148	05/07/2016	05/07/16 19:55	
n-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
n-Propylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Naphthalene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
o-Xylene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
sec-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Styrene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
tert-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Tetrachloroethene	0.78	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Toluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Trichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Trichlorofluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
Vinyl chloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:55	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.0 %</i>	<i>51 - 157</i>		B6E0148	05/07/2016	<i>05/07/16 16:56</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.4 %</i>	<i>51 - 157</i>		B6E0148	05/07/2016	<i>05/07/16 19:55</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.7 %</i>	<i>61 - 123</i>		B6E0148	05/07/2016	<i>05/07/16 16:56</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.9 %</i>	<i>61 - 123</i>		B6E0148	05/07/2016	<i>05/07/16 19:55</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>57 - 147</i>		B6E0148	05/07/2016	<i>05/07/16 19:55</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>57 - 147</i>		B6E0148	05/07/2016	<i>05/07/16 16:56</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6E0148	05/07/2016	<i>05/07/16 16:56</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0148	05/07/2016	<i>05/07/16 19:55</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 : 05/16/2016

Client Sample ID EW-01

Lab ID: 1601592-03

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	73	2.0	1	B6E0141	05/06/2016	05/10/16 00:58	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>62.6 %</i>	<i>42 - 106</i>		<i>B6E0141</i>	<i>05/06/2016</i>	<i>05/10/16 00:58</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>80.7 %</i>	<i>55 - 117</i>		<i>B6E0141</i>	<i>05/06/2016</i>	<i>05/10/16 00:58</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>119 %</i>	<i>52 - 142</i>		<i>B6E0141</i>	<i>05/06/2016</i>	<i>05/10/16 00:58</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>74.8 %</i>	<i>43 - 116</i>		<i>B6E0141</i>	<i>05/06/2016</i>	<i>05/10/16 00:58</i>	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID MW-35C

Lab ID: 1601592-04

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,1,1-Trichloroethane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,1,2-Trichloroethane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,1-Dichloroethane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,1-Dichloroethene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,1-Dichloropropene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,2,3-Trichloropropane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,2-Dibromoethane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,2-Dichlorobenzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,2-Dichloroethane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,2-Dichloropropane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,3-Dichlorobenzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,3-Dichloropropane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
1,4-Dichlorobenzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
2,2-Dichloropropane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
2-Chlorotoluene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
4-Chlorotoluene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
4-Isopropyltoluene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Benzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Bromobenzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Bromodichloromethane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Bromoform	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Bromomethane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Carbon tetrachloride	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Chlorobenzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Chloroethane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Chloroform	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Chloromethane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Dibromochloromethane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	



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 : 05/16/2016

Client Sample ID MW-35C

Lab ID: 1601592-04

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Dichlorodifluoromethane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Ethylbenzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Hexachlorobutadiene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Isopropylbenzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
m,p-Xylene	ND	1.0	1	B6E0147	05/06/2016	05/06/16 21:08	
Methylene chloride	ND	1.0	1	B6E0147	05/06/2016	05/06/16 21:08	
n-Butylbenzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
n-Propylbenzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Naphthalene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
o-Xylene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
sec-Butylbenzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Styrene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
tert-Butylbenzene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Tetrachloroethene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Toluene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Trichloroethene	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Trichlorofluoromethane	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
Vinyl chloride	ND	0.50	1	B6E0147	05/06/2016	05/06/16 21:08	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.6 %</i>	<i>51 - 157</i>		B6E0147	05/06/2016	<i>05/06/16 21:08</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.0 %</i>	<i>61 - 123</i>		B6E0147	05/06/2016	<i>05/06/16 21:08</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>57 - 147</i>		B6E0147	05/06/2016	<i>05/06/16 21:08</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.2 %</i>	<i>61 - 119</i>		B6E0147	05/06/2016	<i>05/06/16 21:08</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 : 05/16/2016

Client Sample ID MW-35C

Lab ID: 1601592-04

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0109	05/05/2016	05/06/16 11:54	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>59.6 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 11:54</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>65.8 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 11:54</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>74.8 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 11:54</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>43.5 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 11:54</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 : 05/16/2016

Client Sample ID MW-36_1SV

Lab ID: 1601592-05

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,1,1-Trichloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,1,2-Trichloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,1-Dichloroethane	0.64	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,1-Dichloroethene	57	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,1-Dichloropropene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,2,3-Trichloropropane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,2-Dibromoethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,2-Dichlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,2-Dichloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,2-Dichloropropane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,3-Dichlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,3-Dichloropropane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
1,4-Dichlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
2,2-Dichloropropane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
2-Chlorotoluene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
4-Chlorotoluene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
4-Isopropyltoluene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Benzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Bromobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Bromodichloromethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Bromoform	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Bromomethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Carbon tetrachloride	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Chlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Chloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Chloroform	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Chloromethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Dibromochloromethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	



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 : 05/16/2016

Client Sample ID MW-36_1SV

Lab ID: 1601592-05

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Dichlorodifluoromethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Ethylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Hexachlorobutadiene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Isopropylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
m,p-Xylene	ND	1.0	1	B6E0147	05/07/2016	05/07/16 02:23	
Methylene chloride	ND	1.0	1	B6E0147	05/07/2016	05/07/16 02:23	
n-Butylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
n-Propylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Naphthalene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
o-Xylene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
sec-Butylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Styrene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
tert-Butylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Tetrachloroethene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Toluene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Trichloroethene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Trichlorofluoromethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
Vinyl chloride	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:23	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>100 %</i>	<i>51 - 157</i>		B6E0147	05/07/2016	<i>05/07/16 02:23</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.9 %</i>	<i>61 - 123</i>		B6E0147	05/07/2016	<i>05/07/16 02:23</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>107 %</i>	<i>57 - 147</i>		B6E0147	05/07/2016	<i>05/07/16 02:23</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0147	05/07/2016	<i>05/07/16 02:23</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 : 05/16/2016

Client Sample ID MW-36_1SV

Lab ID: 1601592-05

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	2.9	0.20	1	B6E0109	05/05/2016	05/06/16 12:21	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>64.9 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 12:21</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>72.4 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 12:21</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>80.4 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 12:21</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>47.0 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 12:21</i>	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID MW-36

Lab ID: 1601592-06

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,1,1-Trichloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,1,2-Trichloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,1-Dichloroethane	1.0	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,1-Dichloroethene	110	5.0	10	B6E0147	05/06/2016	05/06/16 23:23	
1,1-Dichloropropene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,2,3-Trichloropropane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,2-Dibromoethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,2-Dichlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,2-Dichloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,2-Dichloropropane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,3-Dichlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,3-Dichloropropane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
1,4-Dichlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
2,2-Dichloropropane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
2-Chlorotoluene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
4-Chlorotoluene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
4-Isopropyltoluene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Benzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Bromobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Bromodichloromethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Bromoform	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Bromomethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Carbon tetrachloride	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Chlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Chloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Chloroform	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Chloromethane	0.96	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Dibromochloromethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID MW-36

Lab ID: 1601592-06

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Dichlorodifluoromethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Ethylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Hexachlorobutadiene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Isopropylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
m,p-Xylene	ND	1.0	1	B6E0147	05/07/2016	05/07/16 01:38	
Methylene chloride	ND	1.0	1	B6E0147	05/07/2016	05/07/16 01:38	
n-Butylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
n-Propylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Naphthalene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
o-Xylene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
sec-Butylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Styrene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
tert-Butylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Tetrachloroethene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Toluene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Trichloroethene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Trichlorofluoromethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
Vinyl chloride	ND	0.50	1	B6E0147	05/07/2016	05/07/16 01:38	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>96.7 %</i>	<i>51 - 157</i>		B6E0147	05/06/2016	<i>05/06/16 23:23</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.8 %</i>	<i>51 - 157</i>		B6E0147	05/07/2016	<i>05/07/16 01:38</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.8 %</i>	<i>61 - 123</i>		B6E0147	05/06/2016	<i>05/06/16 23:23</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.7 %</i>	<i>61 - 123</i>		B6E0147	05/07/2016	<i>05/07/16 01:38</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>	<i>57 - 147</i>		B6E0147	05/07/2016	<i>05/07/16 01:38</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>57 - 147</i>		B6E0147	05/06/2016	<i>05/06/16 23:23</i>	
<i>Surrogate: Toluene-d8</i>	<i>98.8 %</i>	<i>61 - 119</i>		B6E0147	05/06/2016	<i>05/06/16 23:23</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6E0147	05/07/2016	<i>05/07/16 01:38</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 : 05/16/2016

Client Sample ID MW-36

Lab ID: 1601592-06

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	6.0	0.20	1	B6E0109	05/05/2016	05/06/16 12:49	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>68.0 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 12:49</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>77.3 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 12:49</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>87.6 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 12:49</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>50.4 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 12:49</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 : 05/16/2016

Client Sample ID MW-3600

Lab ID: 1601592-07

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,1,1-Trichloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,1,2-Trichloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,1-Dichloroethane	1.0	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,1-Dichloroethene	120	5.0	10	B6E0147	05/06/2016	05/06/16 23:45	
1,1-Dichloropropene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,2,3-Trichloropropane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,2-Dibromoethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,2-Dichlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,2-Dichloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,2-Dichloropropane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,3-Dichlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,3-Dichloropropane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
1,4-Dichlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
2,2-Dichloropropane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
2-Chlorotoluene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
4-Chlorotoluene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
4-Isopropyltoluene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Benzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Bromobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Bromodichloromethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Bromoform	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Bromomethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Carbon tetrachloride	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Chlorobenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Chloroethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Chloroform	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Chloromethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Dibromochloromethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID MW-3600

Lab ID: 1601592-07

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Dichlorodifluoromethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Ethylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Hexachlorobutadiene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Isopropylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
m,p-Xylene	ND	1.0	1	B6E0147	05/07/2016	05/07/16 02:01	
Methylene chloride	ND	1.0	1	B6E0147	05/07/2016	05/07/16 02:01	
n-Butylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
n-Propylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Naphthalene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
o-Xylene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
sec-Butylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Styrene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
tert-Butylbenzene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Tetrachloroethene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Toluene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Trichloroethene	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Trichlorofluoromethane	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
Vinyl chloride	ND	0.50	1	B6E0147	05/07/2016	05/07/16 02:01	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.6 %</i>	<i>51 - 157</i>		B6E0147	05/07/2016	<i>05/07/16 02:01</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.5 %</i>	<i>51 - 157</i>		B6E0147	05/06/2016	<i>05/06/16 23:45</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.4 %</i>	<i>61 - 123</i>		B6E0147	05/06/2016	<i>05/06/16 23:45</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.2 %</i>	<i>61 - 123</i>		B6E0147	05/07/2016	<i>05/07/16 02:01</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>	<i>57 - 147</i>		B6E0147	05/06/2016	<i>05/06/16 23:45</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>57 - 147</i>		B6E0147	05/07/2016	<i>05/07/16 02:01</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0147	05/07/2016	<i>05/07/16 02:01</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.8 %</i>	<i>61 - 119</i>		B6E0147	05/06/2016	<i>05/06/16 23:45</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 : 05/16/2016

Client Sample ID MW-3600

Lab ID: 1601592-07

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	5.2	0.20	1	B6E0109	05/05/2016	05/06/16 13:16	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>72.7 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 13:16</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>82.6 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 13:16</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>85.0 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 13:16</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>56.5 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 13:16</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 : 05/16/2016

Client Sample ID MW-39

Lab ID: 1601592-08

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,1,1-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,1,2-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,1-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,1-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,1-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,2,3-Trichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,2-Dibromoethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,2-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,2-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,3-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,3-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
1,4-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
2,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
2-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
4-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
4-Isopropyltoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Benzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Bromobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Bromodichloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Bromoform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Bromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Carbon tetrachloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Chlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Chloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Chloroform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Chloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Dibromochloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	



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 : 05/16/2016

Client Sample ID MW-39

Lab ID: 1601592-08

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Dichlorodifluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Ethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Hexachlorobutadiene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Isopropylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
m,p-Xylene	ND	1.0	1	B6E0148	05/07/2016	05/07/16 15:04	
Methylene chloride	ND	1.0	1	B6E0148	05/07/2016	05/07/16 15:04	
n-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
n-Propylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Naphthalene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
o-Xylene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
sec-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Styrene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
tert-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Tetrachloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Toluene	1.1	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Trichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Trichlorofluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
Vinyl chloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:04	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.3 %</i>	<i>51 - 157</i>		B6E0148	05/07/2016	<i>05/07/16 15:04</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.3 %</i>	<i>61 - 123</i>		B6E0148	05/07/2016	<i>05/07/16 15:04</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>57 - 147</i>		B6E0148	05/07/2016	<i>05/07/16 15:04</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0148	05/07/2016	<i>05/07/16 15:04</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 : 05/16/2016

Client Sample ID MW-39

Lab ID: 1601592-08

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0109	05/05/2016	05/06/16 13:43	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	68.7 %	31 - 106		B6E0109	05/05/2016	05/06/16 13:43	
<i>Surrogate: 2-Fluorobiphenyl</i>	79.2 %	28 - 122		B6E0109	05/05/2016	05/06/16 13:43	
<i>Surrogate: 4-Terphenyl-d14</i>	78.8 %	43 - 131		B6E0109	05/05/2016	05/06/16 13:43	
<i>Surrogate: Nitrobenzene-d5</i>	54.1 %	20 - 119		B6E0109	05/05/2016	05/06/16 13:43	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID MW-33_1SV

Lab ID: 1601592-09

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,1,1-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,1,2-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,1-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,1-Dichloroethene	5.2	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,1-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,2,3-Trichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,2-Dibromoethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,2-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,2-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,3-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,3-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
1,4-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
2,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
2-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
4-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
4-Isopropyltoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Benzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Bromobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Bromodichloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Bromoform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Bromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Carbon tetrachloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Chlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Chloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Chloroform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Chloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Dibromochloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	



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 : 05/16/2016

Client Sample ID MW-33_1SV

Lab ID: 1601592-09

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Dichlorodifluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Ethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Hexachlorobutadiene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Isopropylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
m,p-Xylene	ND	1.0	1	B6E0148	05/07/2016	05/07/16 18:25	
Methylene chloride	ND	1.0	1	B6E0148	05/07/2016	05/07/16 18:25	
n-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
n-Propylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Naphthalene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
o-Xylene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
sec-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Styrene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
tert-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Tetrachloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Toluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Trichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Trichlorofluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
Vinyl chloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:25	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.4 %</i>	<i>51 - 157</i>		B6E0148	05/07/2016	<i>05/07/16 18:25</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.0 %</i>	<i>61 - 123</i>		B6E0148	05/07/2016	<i>05/07/16 18:25</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>57 - 147</i>		B6E0148	05/07/2016	<i>05/07/16 18:25</i>	
<i>Surrogate: Toluene-d8</i>	<i>98.7 %</i>	<i>61 - 119</i>		B6E0148	05/07/2016	<i>05/07/16 18:25</i>	



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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 05/16/2016

Client Sample ID MW-33_1SV

Lab ID: 1601592-09

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0109	05/05/2016	05/06/16 14:11	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>75.0 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 14:11</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>84.9 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 14:11</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>85.2 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 14:11</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>59.0 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 14:11</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 : 05/16/2016

Client Sample ID MW-33

Lab ID: 1601592-10

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,1,1-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,1,2-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,1-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,1-Dichloroethene	5.9	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,1-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,2,3-Trichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,2-Dibromoethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,2-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,2-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,3-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,3-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
1,4-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
2,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
2-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
4-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
4-Isopropyltoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Benzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Bromobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Bromodichloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Bromoform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Bromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Carbon tetrachloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Chlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Chloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Chloroform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Chloromethane	0.50	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Dibromochloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	



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 : 05/16/2016

Client Sample ID MW-33

Lab ID: 1601592-10

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Dichlorodifluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Ethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Hexachlorobutadiene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Isopropylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
m,p-Xylene	ND	1.0	1	B6E0148	05/07/2016	05/07/16 15:49	
Methylene chloride	ND	1.0	1	B6E0148	05/07/2016	05/07/16 15:49	
n-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
n-Propylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Naphthalene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
o-Xylene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
sec-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Styrene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
tert-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Tetrachloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Toluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Trichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Trichlorofluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
Vinyl chloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:49	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>102 %</i>	<i>51 - 157</i>		B6E0148	05/07/2016	<i>05/07/16 15:49</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.0 %</i>	<i>61 - 123</i>		B6E0148	05/07/2016	<i>05/07/16 15:49</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>109 %</i>	<i>57 - 147</i>		B6E0148	05/07/2016	<i>05/07/16 15:49</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.2 %</i>	<i>61 - 119</i>		B6E0148	05/07/2016	<i>05/07/16 15:49</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 : 05/16/2016

Client Sample ID MW-33

Lab ID: 1601592-10

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0109	05/05/2016	05/06/16 14:38	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>70.5 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 14:38</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>80.6 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 14:38</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>87.4 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 14:38</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>57.8 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 14:38</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 : 05/16/2016

Client Sample ID MW-37

Lab ID: 1601592-11

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,1,1-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,1,2-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,1-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,1-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,1-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,2,3-Trichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,2-Dibromoethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,2-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,2-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,3-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,3-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
1,4-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
2,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
2-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
4-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
4-Isopropyltoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Benzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Bromobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Bromodichloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Bromoform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Bromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Carbon tetrachloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Chlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Chloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Chloroform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Chloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Dibromochloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 05/16/2016

Client Sample ID MW-37

Lab ID: 1601592-11

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Dichlorodifluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Ethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Hexachlorobutadiene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Isopropylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
m,p-Xylene	ND	1.0	1	B6E0148	05/07/2016	05/07/16 14:20	
Methylene chloride	ND	1.0	1	B6E0148	05/07/2016	05/07/16 14:20	
n-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
n-Propylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Naphthalene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
o-Xylene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
sec-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Styrene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
tert-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Tetrachloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Toluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Trichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Trichlorofluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
Vinyl chloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.9 %</i>	<i>51 - 157</i>		B6E0148	05/07/2016	<i>05/07/16 14:20</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91.8 %</i>	<i>61 - 123</i>		B6E0148	05/07/2016	<i>05/07/16 14:20</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>57 - 147</i>		B6E0148	05/07/2016	<i>05/07/16 14:20</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.8 %</i>	<i>61 - 119</i>		B6E0148	05/07/2016	<i>05/07/16 14:20</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 : 05/16/2016

Client Sample ID MW-37

Lab ID: 1601592-11

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0109	05/05/2016	05/06/16 15:05	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>63.5 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 15:05</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>72.6 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 15:05</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>76.2 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 15:05</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>50.5 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 15:05</i>	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID MW-32B_1SV

Lab ID: 1601592-12

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,1,1-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,1,2-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,1-Dichloroethane	1.0	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,1-Dichloroethene	120	5.0	10	B6E0148	05/07/2016	05/07/16 17:41	
1,1-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,2,3-Trichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,2-Dibromoethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,2-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,2-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,3-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,3-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
1,4-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
2,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
2-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
4-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
4-Isopropyltoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Benzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Bromobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Bromodichloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Bromoform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Bromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Carbon tetrachloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Chlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Chloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Chloroform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Chloromethane	0.60	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
cis-1,2-Dichloroethene	4.5	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Dibromochloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID MW-32B_1SV

Lab ID: 1601592-12

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Dichlorodifluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Ethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Hexachlorobutadiene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Isopropylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
m,p-Xylene	ND	1.0	1	B6E0148	05/07/2016	05/07/16 20:40	
Methylene chloride	ND	1.0	1	B6E0148	05/07/2016	05/07/16 20:40	
n-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
n-Propylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Naphthalene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
o-Xylene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
sec-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Styrene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
tert-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Tetrachloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Toluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Trichloroethene	42	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Trichlorofluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
Vinyl chloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:40	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.8 %</i>	<i>51 - 157</i>		B6E0148	05/07/2016	<i>05/07/16 17:41</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>103 %</i>	<i>51 - 157</i>		B6E0148	05/07/2016	<i>05/07/16 20:40</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.0 %</i>	<i>61 - 123</i>		B6E0148	05/07/2016	<i>05/07/16 17:41</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.1 %</i>	<i>61 - 123</i>		B6E0148	05/07/2016	<i>05/07/16 20:40</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>110 %</i>	<i>57 - 147</i>		B6E0148	05/07/2016	<i>05/07/16 20:40</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>57 - 147</i>		B6E0148	05/07/2016	<i>05/07/16 17:41</i>	
<i>Surrogate: Toluene-d8</i>	<i>97.0 %</i>	<i>61 - 119</i>		B6E0148	05/07/2016	<i>05/07/16 17:41</i>	
<i>Surrogate: Toluene-d8</i>	<i>95.1 %</i>	<i>61 - 119</i>		B6E0148	05/07/2016	<i>05/07/16 20:40</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 : 05/16/2016

Client Sample ID MW-32B_1SV

Lab ID: 1601592-12

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	2.9	0.20	1	B6E0109	05/05/2016	05/06/16 15:32	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>60.5 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 15:32</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>67.4 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 15:32</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>78.2 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 15:32</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>49.8 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 15:32</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 : 05/16/2016

Client Sample ID MW-32B

Lab ID: 1601592-13

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,1,1-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,1,2-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,1-Dichloroethane	1.3	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,1-Dichloroethene	160	5.0	10	B6E0148	05/07/2016	05/07/16 17:18	
1,1-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,2,3-Trichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,2-Dibromoethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,2-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,2-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,3-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,3-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
1,4-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
2,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
2-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
4-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
4-Isopropyltoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Benzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Bromobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Bromodichloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Bromoform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Bromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Carbon tetrachloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Chlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Chloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Chloroform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Chloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
cis-1,2-Dichloroethene	5.4	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Dibromochloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID MW-32B

Lab ID: 1601592-13

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Dichlorodifluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Ethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Hexachlorobutadiene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Isopropylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
m,p-Xylene	ND	1.0	1	B6E0148	05/07/2016	05/07/16 20:17	
Methylene chloride	ND	1.0	1	B6E0148	05/07/2016	05/07/16 20:17	
n-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
n-Propylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Naphthalene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
o-Xylene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
sec-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Styrene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
tert-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Tetrachloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Toluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Trichloroethene	54	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Trichlorofluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
Vinyl chloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 20:17	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.0 %</i>	<i>51 - 157</i>		B6E0148	05/07/2016	<i>05/07/16 20:17</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.1 %</i>	<i>51 - 157</i>		B6E0148	05/07/2016	<i>05/07/16 17:18</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.4 %</i>	<i>61 - 123</i>		B6E0148	05/07/2016	<i>05/07/16 17:18</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91.8 %</i>	<i>61 - 123</i>		B6E0148	05/07/2016	<i>05/07/16 20:17</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>57 - 147</i>		B6E0148	05/07/2016	<i>05/07/16 17:18</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>57 - 147</i>		B6E0148	05/07/2016	<i>05/07/16 20:17</i>	
<i>Surrogate: Toluene-d8</i>	<i>91.7 %</i>	<i>61 - 119</i>		B6E0148	05/07/2016	<i>05/07/16 20:17</i>	
<i>Surrogate: Toluene-d8</i>	<i>97.0 %</i>	<i>61 - 119</i>		B6E0148	05/07/2016	<i>05/07/16 17:18</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 : 05/16/2016

Client Sample ID MW-32B

Lab ID: 1601592-13

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	2.7	0.20	1	B6E0109	05/05/2016	05/06/16 16:00	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>63.4 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 16:00</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>71.3 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 16:00</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>89.7 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 16:00</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>51.0 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 16:00</i>	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID MW-28

Lab ID: 1601592-14

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,1,1-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,1,2-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,1-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,1-Dichloroethene	0.82	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,1-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,2,3-Trichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,2-Dibromoethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,2-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,2-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,3-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,3-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
1,4-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
2,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
2-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
4-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
4-Isopropyltoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Benzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Bromobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Bromodichloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Bromoform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Bromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Carbon tetrachloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Chlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Chloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Chloroform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Chloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Dibromochloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	



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 : 05/16/2016

Client Sample ID MW-28

Lab ID: 1601592-14

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Dichlorodifluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Ethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Hexachlorobutadiene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Isopropylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
m,p-Xylene	ND	1.0	1	B6E0148	05/07/2016	05/07/16 15:27	
Methylene chloride	ND	1.0	1	B6E0148	05/07/2016	05/07/16 15:27	
n-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
n-Propylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Naphthalene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
o-Xylene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
sec-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Styrene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
tert-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Tetrachloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Toluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Trichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Trichlorofluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
Vinyl chloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 15:27	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.4 %</i>	<i>51 - 157</i>		B6E0148	05/07/2016	<i>05/07/16 15:27</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.2 %</i>	<i>61 - 123</i>		B6E0148	05/07/2016	<i>05/07/16 15:27</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>57 - 147</i>		B6E0148	05/07/2016	<i>05/07/16 15:27</i>	
<i>Surrogate: Toluene-d8</i>	<i>97.5 %</i>	<i>61 - 119</i>		B6E0148	05/07/2016	<i>05/07/16 15:27</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 : 05/16/2016

Client Sample ID MW-28

Lab ID: 1601592-14

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0109	05/05/2016	05/06/16 16:27	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>65.2 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 16:27</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>71.4 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 16:27</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>91.7 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 16:27</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>51.6 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 16:27</i>	



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Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID MW-34B

Lab ID: 1601592-15

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,1,1-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,1,2-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,1-Dichloroethane	0.94	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,1-Dichloroethene	57	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,1-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,2,3-Trichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,2-Dibromoethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,2-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,2-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,3-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,3-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
1,4-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
2,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
2-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
4-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
4-Isopropyltoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Benzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Bromobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Bromodichloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Bromoform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Bromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Carbon tetrachloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Chlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Chloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Chloroform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Chloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Dibromochloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	



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 : 05/16/2016

Client Sample ID MW-34B

Lab ID: 1601592-15

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Dichlorodifluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Ethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Hexachlorobutadiene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Isopropylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
m,p-Xylene	ND	1.0	1	B6E0148	05/07/2016	05/07/16 19:10	
Methylene chloride	ND	1.0	1	B6E0148	05/07/2016	05/07/16 19:10	
n-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
n-Propylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Naphthalene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
o-Xylene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
sec-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Styrene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
tert-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Tetrachloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Toluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Trichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Trichlorofluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
Vinyl chloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:10	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>100 %</i>	<i>51 - 157</i>		B6E0148	05/07/2016	<i>05/07/16 19:10</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.2 %</i>	<i>61 - 123</i>		B6E0148	05/07/2016	<i>05/07/16 19:10</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>	<i>57 - 147</i>		B6E0148	05/07/2016	<i>05/07/16 19:10</i>	
<i>Surrogate: Toluene-d8</i>	<i>105 %</i>	<i>61 - 119</i>		B6E0148	05/07/2016	<i>05/07/16 19:10</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 : 05/16/2016

Client Sample ID MW-34B

Lab ID: 1601592-15

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	30	2.0	1	B6E0141	05/06/2016	05/10/16 01:25	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	53.3 %	42 - 106		B6E0141	05/06/2016	05/10/16 01:25	
<i>Surrogate: 2-Fluorobiphenyl</i>	70.0 %	55 - 117		B6E0141	05/06/2016	05/10/16 01:25	
<i>Surrogate: 4-Terphenyl-d14</i>	122 %	52 - 142		B6E0141	05/06/2016	05/10/16 01:25	
<i>Surrogate: Nitrobenzene-d5</i>	65.1 %	43 - 116		B6E0141	05/06/2016	05/10/16 01:25	



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Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID MW-3400B

Lab ID: 1601592-16

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,1,1-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,1,2-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,1-Dichloroethane	1.1	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,1-Dichloroethene	73	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,1-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,2,3-Trichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,2-Dibromoethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,2-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,2-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,3-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,3-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
1,4-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
2,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
2-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
4-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
4-Isopropyltoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Benzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Bromobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Bromodichloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Bromoform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Bromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Carbon tetrachloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Chlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Chloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Chloroform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Chloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Dibromochloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	



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 : 05/16/2016

Client Sample ID MW-3400B

Lab ID: 1601592-16

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Dichlorodifluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Ethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Hexachlorobutadiene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Isopropylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
m,p-Xylene	ND	1.0	1	B6E0148	05/07/2016	05/07/16 19:32	
Methylene chloride	ND	1.0	1	B6E0148	05/07/2016	05/07/16 19:32	
n-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
n-Propylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Naphthalene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
o-Xylene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
sec-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Styrene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
tert-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Tetrachloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Toluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Trichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Trichlorofluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
Vinyl chloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 19:32	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.0 %</i>	<i>51 - 157</i>		B6E0148	05/07/2016	<i>05/07/16 19:32</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.4 %</i>	<i>61 - 123</i>		B6E0148	05/07/2016	<i>05/07/16 19:32</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>	<i>57 - 147</i>		B6E0148	05/07/2016	<i>05/07/16 19:32</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6E0148	05/07/2016	<i>05/07/16 19:32</i>	



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Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 05/16/2016

Client Sample ID MW-3400B

Lab ID: 1601592-16

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	24	2.0	1	B6E0141	05/06/2016	05/10/16 01:53	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	53.4 %	42 - 106		B6E0141	05/06/2016	05/10/16 01:53	
<i>Surrogate: 2-Fluorobiphenyl</i>	66.9 %	55 - 117		B6E0141	05/06/2016	05/10/16 01:53	
<i>Surrogate: 4-Terphenyl-d14</i>	120 %	52 - 142		B6E0141	05/06/2016	05/10/16 01:53	
<i>Surrogate: Nitrobenzene-d5</i>	62.1 %	43 - 116		B6E0141	05/06/2016	05/10/16 01:53	



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 : 05/16/2016

Client Sample ID MW-38

Lab ID: 1601592-17

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,1,1-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,1,2-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,1-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,1-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,1-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,2,3-Trichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,2-Dibromoethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,2-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,2-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,3-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,3-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
1,4-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
2,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
2-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
4-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
4-Isopropyltoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Benzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Bromobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Bromodichloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Bromoform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Bromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Carbon tetrachloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Chlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Chloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Chloroform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Chloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Dibromochloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	



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 : 05/16/2016

Client Sample ID MW-38

Lab ID: 1601592-17

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Dichlorodifluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Ethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Hexachlorobutadiene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Isopropylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
m,p-Xylene	ND	1.0	1	B6E0148	05/07/2016	05/07/16 14:42	
Methylene chloride	ND	1.0	1	B6E0148	05/07/2016	05/07/16 14:42	
n-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
n-Propylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Naphthalene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
o-Xylene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
sec-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Styrene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
tert-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Tetrachloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Toluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Trichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Trichlorofluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
Vinyl chloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 14:42	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.1 %</i>	<i>51 - 157</i>		B6E0148	05/07/2016	<i>05/07/16 14:42</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.4 %</i>	<i>61 - 123</i>		B6E0148	05/07/2016	<i>05/07/16 14:42</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>	<i>57 - 147</i>		B6E0148	05/07/2016	<i>05/07/16 14:42</i>	
<i>Surrogate: Toluene-d8</i>	<i>98.4 %</i>	<i>61 - 119</i>		B6E0148	05/07/2016	<i>05/07/16 14:42</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 : 05/16/2016

Client Sample ID MW-38

Lab ID: 1601592-17

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0109	05/05/2016	05/06/16 16:55	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>66.0 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 16:55</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>74.5 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 16:55</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>95.0 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 16:55</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>52.0 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 16:55</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 : 05/16/2016

Client Sample ID MW-41

Lab ID: 1601592-18

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,1,1-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,1,2-Trichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,1-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,1-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,1-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,2,3-Trichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,2-Dibromoethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,2-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,2-Dichloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,3-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,3-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
1,4-Dichlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
2,2-Dichloropropane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
2-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
4-Chlorotoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
4-Isopropyltoluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Benzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Bromobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Bromodichloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Bromoform	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Bromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Carbon tetrachloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Chlorobenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Chloroethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Chloroform	0.72	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Chloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Dibromochloromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	



Certificate of Analysis

Hargis & Associates, Inc.

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San Diego, CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 05/16/2016

Client Sample ID MW-41

Lab ID: 1601592-18

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Dichlorodifluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Ethylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Hexachlorobutadiene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Isopropylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
m,p-Xylene	ND	1.0	1	B6E0148	05/07/2016	05/07/16 18:48	
Methylene chloride	ND	1.0	1	B6E0148	05/07/2016	05/07/16 18:48	
n-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
n-Propylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Naphthalene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
o-Xylene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
sec-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Styrene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
tert-Butylbenzene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Tetrachloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Toluene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Trichloroethene	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Trichlorofluoromethane	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
Vinyl chloride	ND	0.50	1	B6E0148	05/07/2016	05/07/16 18:48	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>	<i>51 - 157</i>		B6E0148	05/07/2016	<i>05/07/16 18:48</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.2 %</i>	<i>61 - 123</i>		B6E0148	05/07/2016	<i>05/07/16 18:48</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>	<i>57 - 147</i>		B6E0148	05/07/2016	<i>05/07/16 18:48</i>	
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>	<i>61 - 119</i>		B6E0148	05/07/2016	<i>05/07/16 18:48</i>	



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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 05/16/2016

Client Sample ID MW-41

Lab ID: 1601592-18

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0109	05/05/2016	05/06/16 17:22	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>74.2 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 17:22</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>82.7 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 17:22</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>103 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 17:22</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>58.9 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 17:22</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 : 05/16/2016

Client Sample ID MW-26C

Lab ID: 1601592-19

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,1,1-Trichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,1,2-Trichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,1-Dichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,1-Dichloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,1-Dichloropropene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,2,3-Trichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,2-Dibromoethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,2-Dichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,2-Dichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,2-Dichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,3-Dichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,3-Dichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
1,4-Dichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
2,2-Dichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
2-Chlorotoluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
4-Chlorotoluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
4-Isopropyltoluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Benzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Bromobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Bromodichloromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Bromoform	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Bromomethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Carbon tetrachloride	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Chlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Chloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Chloroform	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Chloromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Dibromochloromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	



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 : 05/16/2016

Client Sample ID MW-26C

Lab ID: 1601592-19

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Dichlorodifluoromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Ethylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Hexachlorobutadiene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Isopropylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
m,p-Xylene	ND	1.0	1	B6E0195	05/10/2016	05/10/16 22:33	
Methylene chloride	ND	1.0	1	B6E0195	05/10/2016	05/10/16 22:33	
n-Butylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
n-Propylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Naphthalene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
o-Xylene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
sec-Butylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Styrene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
tert-Butylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Tetrachloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Toluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Trichloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Trichlorofluoromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
Vinyl chloride	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:33	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.6 %</i>	<i>51 - 157</i>		B6E0195	05/10/2016	<i>05/10/16 22:33</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.6 %</i>	<i>61 - 123</i>		B6E0195	05/10/2016	<i>05/10/16 22:33</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>57 - 147</i>		B6E0195	05/10/2016	<i>05/10/16 22:33</i>	
<i>Surrogate: Toluene-d8</i>	<i>98.6 %</i>	<i>61 - 119</i>		B6E0195	05/10/2016	<i>05/10/16 22:33</i>	



Certificate of Analysis

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San Diego, CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 05/16/2016

Client Sample ID MW-26C

Lab ID: 1601592-19

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0109	05/05/2016	05/06/16 17:50	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	68.7 %	31 - 106		B6E0109	05/05/2016	05/06/16 17:50	
<i>Surrogate: 2-Fluorobiphenyl</i>	77.1 %	28 - 122		B6E0109	05/05/2016	05/06/16 17:50	
<i>Surrogate: 4-Terphenyl-d14</i>	84.9 %	43 - 131		B6E0109	05/05/2016	05/06/16 17:50	
<i>Surrogate: Nitrobenzene-d5</i>	52.7 %	20 - 119		B6E0109	05/05/2016	05/06/16 17:50	



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Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID MW-30A

Lab ID: 1601592-20

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,1,1-Trichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,1,2-Trichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,1-Dichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,1-Dichloroethene	0.99	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,1-Dichloropropene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,2,3-Trichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,2-Dibromoethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,2-Dichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,2-Dichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,2-Dichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,3-Dichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,3-Dichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
1,4-Dichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
2,2-Dichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
2-Chlorotoluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
4-Chlorotoluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
4-Isopropyltoluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Benzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Bromobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Bromodichloromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Bromoform	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Bromomethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Carbon tetrachloride	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Chlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Chloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Chloroform	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Chloromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Dibromochloromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	



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 : 05/16/2016

Client Sample ID MW-30A

Lab ID: 1601592-20

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Dichlorodifluoromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Ethylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Hexachlorobutadiene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Isopropylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
m,p-Xylene	ND	1.0	1	B6E0195	05/10/2016	05/10/16 23:21	
Methylene chloride	ND	1.0	1	B6E0195	05/10/2016	05/10/16 23:21	
n-Butylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
n-Propylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Naphthalene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
o-Xylene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
sec-Butylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Styrene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
tert-Butylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Tetrachloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Toluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Trichloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Trichlorofluoromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
Vinyl chloride	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:21	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>96.7 %</i>	<i>51 - 157</i>		B6E0195	05/10/2016	<i>05/10/16 23:21</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.9 %</i>	<i>61 - 123</i>		B6E0195	05/10/2016	<i>05/10/16 23:21</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>103 %</i>	<i>57 - 147</i>		B6E0195	05/10/2016	<i>05/10/16 23:21</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0195	05/10/2016	<i>05/10/16 23:21</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 : 05/16/2016

Client Sample ID MW-30A

Lab ID: 1601592-20

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	0.23	0.20	1	B6E0109	05/05/2016	05/06/16 18:18	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>67.7 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 18:18</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>77.0 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 18:18</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>85.3 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 18:18</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>55.6 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 18:18</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 : 05/16/2016

Client Sample ID MW-30B

Lab ID: 1601592-21

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,1,1-Trichloroethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,1,2-Trichloroethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,1-Dichloroethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,1-Dichloroethene	20	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,1-Dichloropropene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,2,3-Trichloropropane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,2-Dibromoethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,2-Dichlorobenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,2-Dichloroethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,2-Dichloropropane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,3-Dichlorobenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,3-Dichloropropane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
1,4-Dichlorobenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
2,2-Dichloropropane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
2-Chlorotoluene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
4-Chlorotoluene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
4-Isopropyltoluene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Benzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Bromobenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Bromodichloromethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Bromoform	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Bromomethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Carbon tetrachloride	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Chlorobenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Chloroethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Chloroform	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Chloromethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
cis-1,2-Dichloroethene	5.5	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Dibromochloromethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	



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 : 05/16/2016

Client Sample ID MW-30B

Lab ID: 1601592-21

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Dichlorodifluoromethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Ethylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Hexachlorobutadiene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Isopropylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
m,p-Xylene	ND	1.0	1	B6E0195	05/11/2016	05/11/16 00:33	
Methylene chloride	ND	1.0	1	B6E0195	05/11/2016	05/11/16 00:33	
n-Butylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
n-Propylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Naphthalene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
o-Xylene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
sec-Butylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Styrene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
tert-Butylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Tetrachloroethene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Toluene	0.75	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Trichloroethene	96	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Trichlorofluoromethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
Vinyl chloride	ND	0.50	1	B6E0195	05/11/2016	05/11/16 00:33	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97.7 %</i>	<i>51 - 157</i>		B6E0195	05/11/2016	<i>05/11/16 00:33</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.4 %</i>	<i>61 - 123</i>		B6E0195	05/11/2016	<i>05/11/16 00:33</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>57 - 147</i>		B6E0195	05/11/2016	<i>05/11/16 00:33</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.0 %</i>	<i>61 - 119</i>		B6E0195	05/11/2016	<i>05/11/16 00:33</i>	



Certificate of Analysis

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San Diego, CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 05/16/2016

Client Sample ID MW-30B

Lab ID: 1601592-21

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	0.43	0.20	1	B6E0109	05/05/2016	05/06/16 18:45	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>47.0 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 18:45</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>57.0 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 18:45</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>72.9 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 18:45</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>37.0 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 18:45</i>	



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Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID MW-08

Lab ID: 1601592-22

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,1,1-Trichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,1,2-Trichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,1-Dichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,1-Dichloroethene	25	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,1-Dichloropropene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,2,3-Trichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,2-Dibromoethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,2-Dichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,2-Dichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,2-Dichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,3-Dichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,3-Dichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
1,4-Dichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
2,2-Dichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
2-Chlorotoluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
4-Chlorotoluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
4-Isopropyltoluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Benzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Bromobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Bromodichloromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Bromoform	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Bromomethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Carbon tetrachloride	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Chlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Chloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Chloroform	0.65	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Chloromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
cis-1,2-Dichloroethene	9.6	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Dibromochloromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	



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 : 05/16/2016

Client Sample ID MW-08

Lab ID: 1601592-22

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Dichlorodifluoromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Ethylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Hexachlorobutadiene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Isopropylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
m,p-Xylene	ND	1.0	1	B6E0195	05/10/2016	05/10/16 22:57	
Methylene chloride	ND	1.0	1	B6E0195	05/10/2016	05/10/16 22:57	
n-Butylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
n-Propylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Naphthalene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
o-Xylene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
sec-Butylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Styrene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
tert-Butylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Tetrachloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Toluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Trichloroethene	140	5.0	10	B6E0248	05/12/2016	05/12/16 00:59	
Trichlorofluoromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
Vinyl chloride	ND	0.50	1	B6E0195	05/10/2016	05/10/16 22:57	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.0 %</i>	<i>51 - 157</i>		B6E0248	05/12/2016	<i>05/12/16 00:59</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97.6 %</i>	<i>51 - 157</i>		B6E0195	05/10/2016	<i>05/10/16 22:57</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.8 %</i>	<i>61 - 123</i>		B6E0248	05/12/2016	<i>05/12/16 00:59</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.3 %</i>	<i>61 - 123</i>		B6E0195	05/10/2016	<i>05/10/16 22:57</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>	<i>57 - 147</i>		B6E0195	05/10/2016	<i>05/10/16 22:57</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>	<i>57 - 147</i>		B6E0248	05/12/2016	<i>05/12/16 00:59</i>	
<i>Surrogate: Toluene-d8</i>	<i>97.6 %</i>	<i>61 - 119</i>		B6E0248	05/12/2016	<i>05/12/16 00:59</i>	
<i>Surrogate: Toluene-d8</i>	<i>93.1 %</i>	<i>61 - 119</i>		B6E0195	05/10/2016	<i>05/10/16 22:57</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 : 05/16/2016

Client Sample ID MW-08

Lab ID: 1601592-22

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	0.70	0.20	1	B6E0109	05/05/2016	05/06/16 19:13	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>57.3 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 19:13</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>65.3 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 19:13</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>91.0 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 19:13</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>46.0 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 19:13</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 : 05/16/2016

Client Sample ID MW-40

Lab ID: 1601592-23

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,1,1-Trichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,1,2-Trichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,1-Dichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,1-Dichloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,1-Dichloropropene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,2,3-Trichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,2-Dibromoethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,2-Dichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,2-Dichloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,2-Dichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,3-Dichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,3-Dichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
1,4-Dichlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
2,2-Dichloropropane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
2-Chlorotoluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
4-Chlorotoluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
4-Isopropyltoluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Benzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Bromobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Bromodichloromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Bromoform	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Bromomethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Carbon tetrachloride	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Chlorobenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Chloroethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Chloroform	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Chloromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Dibromochloromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	



Certificate of Analysis

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Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 05/16/2016

Client Sample ID MW-40

Lab ID: 1601592-23

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Dichlorodifluoromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Ethylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Hexachlorobutadiene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Isopropylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
m,p-Xylene	ND	1.0	1	B6E0195	05/10/2016	05/10/16 23:45	
Methylene chloride	ND	1.0	1	B6E0195	05/10/2016	05/10/16 23:45	
n-Butylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
n-Propylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Naphthalene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
o-Xylene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
sec-Butylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Styrene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
tert-Butylbenzene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Tetrachloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Toluene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Trichloroethene	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Trichlorofluoromethane	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
Vinyl chloride	ND	0.50	1	B6E0195	05/10/2016	05/10/16 23:45	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>96.9 %</i>	<i>51 - 157</i>		B6E0195	05/10/2016	<i>05/10/16 23:45</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.5 %</i>	<i>61 - 123</i>		B6E0195	05/10/2016	<i>05/10/16 23:45</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>57 - 147</i>		B6E0195	05/10/2016	<i>05/10/16 23:45</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.4 %</i>	<i>61 - 119</i>		B6E0195	05/10/2016	<i>05/10/16 23:45</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 : 05/16/2016

Client Sample ID MW-40

Lab ID: 1601592-23

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0109	05/05/2016	05/06/16 19:41	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>68.8 %</i>	<i>31 - 106</i>		B6E0109	05/05/2016	<i>05/06/16 19:41</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>77.8 %</i>	<i>28 - 122</i>		B6E0109	05/05/2016	<i>05/06/16 19:41</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>94.0 %</i>	<i>43 - 131</i>		B6E0109	05/05/2016	<i>05/06/16 19:41</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>55.8 %</i>	<i>20 - 119</i>		B6E0109	05/05/2016	<i>05/06/16 19:41</i>	



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Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID MW-31

Lab ID: 1601592-24

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,1,1-Trichloroethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,1,2-Trichloroethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,1-Dichloroethane	1.3	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,1-Dichloroethene	140	5.0	10	B6E0195	05/11/2016	05/11/16 00:57	
1,1-Dichloropropene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,2,3-Trichloropropane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,2-Dibromoethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,2-Dichlorobenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,2-Dichloroethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,2-Dichloropropane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,3-Dichlorobenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,3-Dichloropropane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
1,4-Dichlorobenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
2,2-Dichloropropane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
2-Chlorotoluene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
4-Chlorotoluene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
4-Isopropyltoluene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Benzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Bromobenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Bromodichloromethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Bromoform	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Bromomethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Carbon tetrachloride	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Chlorobenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Chloroethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Chloroform	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Chloromethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Dibromochloromethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

Client Sample ID MW-31

Lab ID: 1601592-24

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Dichlorodifluoromethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Ethylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Hexachlorobutadiene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Isopropylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
m,p-Xylene	ND	1.0	1	B6E0195	05/11/2016	05/11/16 01:21	
Methylene chloride	ND	1.0	1	B6E0195	05/11/2016	05/11/16 01:21	
n-Butylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
n-Propylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Naphthalene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
o-Xylene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
sec-Butylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Styrene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
tert-Butylbenzene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Tetrachloroethene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Toluene	0.87	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Trichloroethene	6.2	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Trichlorofluoromethane	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
Vinyl chloride	ND	0.50	1	B6E0195	05/11/2016	05/11/16 01:21	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>	<i>51 - 157</i>		B6E0195	05/11/2016	<i>05/11/16 01:21</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97.3 %</i>	<i>51 - 157</i>		B6E0195	05/11/2016	<i>05/11/16 00:57</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.4 %</i>	<i>61 - 123</i>		B6E0195	05/11/2016	<i>05/11/16 01:21</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.0 %</i>	<i>61 - 123</i>		B6E0195	05/11/2016	<i>05/11/16 00:57</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>110 %</i>	<i>57 - 147</i>		B6E0195	05/11/2016	<i>05/11/16 01:21</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>57 - 147</i>		B6E0195	05/11/2016	<i>05/11/16 00:57</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0195	05/11/2016	<i>05/11/16 01:21</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0195	05/11/2016	<i>05/11/16 00:57</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 : 05/16/2016

Client Sample ID MW-31

Lab ID: 1601592-24

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	3.9	0.20	1	B6E0109	05/05/2016	05/06/16 20:08	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	66.2 %	31 - 106		B6E0109	05/05/2016	05/06/16 20:08	
<i>Surrogate: 2-Fluorobiphenyl</i>	74.9 %	28 - 122		B6E0109	05/05/2016	05/06/16 20:08	
<i>Surrogate: 4-Terphenyl-d14</i>	73.7 %	43 - 131		B6E0109	05/05/2016	05/06/16 20:08	
<i>Surrogate: Nitrobenzene-d5</i>	53.0 %	20 - 119		B6E0109	05/05/2016	05/06/16 20:08	



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 : 05/16/2016

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
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Batch B6E0131 - MSVOA_LL_W

Blank (B6E0131-BLK1)

Prepared: 5/5/2016 Analyzed: 5/5/2016

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 : 05/16/2016

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
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Batch B6E0131 - MSVOA_LL_W (continued)

Blank (B6E0131-BLK1) - Continued

Prepared: 5/5/2016 Analyzed: 5/5/2016

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				
<hr/>									
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.21</i>		<i>25.0000</i>		<i>92.8</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.18</i>		<i>25.0000</i>		<i>96.7</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>25.03</i>		<i>25.0000</i>		<i>100</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>24.95</i>		<i>25.0000</i>		<i>99.8</i>	<i>61 - 119</i>			

LCS (B6E0131-BS1)

Prepared: 5/5/2016 Analyzed: 5/5/2016

1,1,1,2-Tetrachloroethane	21.1200	0.50	20.0000		106	76 - 132			
1,1,1-Trichloroethane	20.9000	0.50	20.0000		104	72 - 144			
1,1,2,2-Tetrachloroethane	19.1800	0.50	20.0000		95.9	70 - 120			
1,1,2-Trichloroethane	17.3100	0.50	20.0000		86.6	75 - 120			
1,1-Dichloroethane	19.5600	0.50	20.0000		97.8	65 - 127			
1,1-Dichloroethene	19.7900	0.50	20.0000		99.0	63 - 142			
1,1-Dichloropropene	21.8200	0.50	20.0000		109	78 - 137			
1,2,3-Trichloropropane	17.2700	0.50	20.0000		86.4	73 - 118			
1,2,3-Trichlorobenzene	18.8100	0.50	20.0000		94.0	53 - 164			
1,2,4-Trichlorobenzene	19.1300	0.50	20.0000		95.6	58 - 144			
1,2,4-Trimethylbenzene	20.8400	0.50	20.0000		104	75 - 140			
1,2-Dibromo-3-chloropropane	15.9700	0.50	20.0000		79.8	61 - 131			
1,2-Dibromoethane	17.8800	0.50	20.0000		89.4	74 - 125			
1,2-Dichlorobenzene	19.7600	0.50	20.0000		98.8	78 - 122			
1,2-Dichloroethane	17.2700	0.50	20.0000		86.4	70 - 126			
1,2-Dichloropropane	17.8600	0.50	20.0000		89.3	69 - 120			
1,3,5-Trimethylbenzene	21.7100	0.50	20.0000		109	73 - 145			



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 : 05/16/2016

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
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Batch B6E0131 - MSVOA_LL_W (continued)

LCS (B6E0131-BS1) - Continued

Prepared: 5/5/2016 Analyzed: 5/5/2016

1,3-Dichlorobenzene	20.2700	0.50	20.0000		101	76 - 126			
1,3-Dichloropropane	17.1700	0.50	20.0000		85.8	76 - 117			
1,4-Dichlorobenzene	20.1200	0.50	20.0000		101	77 - 120			
2,2-Dichloropropane	21.3800	0.50	20.0000		107	47 - 169			
2-Chlorotoluene	20.7000	0.50	20.0000		104	75 - 135			
4-Chlorotoluene	20.6100	0.50	20.0000		103	70 - 133			
4-Isopropyltoluene	22.0400	0.50	20.0000		110	72 - 153			
Benzene	39.8100	0.50	40.0000		99.5	73 - 123			
Bromobenzene	19.4500	0.50	20.0000		97.2	75 - 121			
Bromodichloromethane	18.7500	0.50	20.0000		93.8	73 - 124			
Bromoform	17.4500	0.50	20.0000		87.2	70 - 135			
Bromomethane	13.7800	0.50	20.0000		68.9	10 - 166			
Carbon tetrachloride	23.2500	0.50	20.0000		116	65 - 171			
Chlorobenzene	19.9800	0.50	20.0000		99.9	80 - 121			
Chloroethane	19.5400	0.50	20.0000		97.7	55 - 143			
Chloroform	18.0700	0.50	20.0000		90.4	65 - 130			
Chloromethane	19.4900	0.50	20.0000		97.4	21 - 141			
cis-1,2-Dichloroethene	18.4200	0.50	20.0000		92.1	64 - 126			
cis-1,3-Dichloropropene	21.6200	0.50	20.0000		108	70 - 131			
Dibromochloromethane	19.4500	0.50	20.0000		97.2	74 - 125			
Dibromomethane	17.2700	0.50	20.0000		86.4	74 - 116			
Dichlorodifluoromethane	20.1600	0.50	20.0000		101	40 - 186			
Ethylbenzene	40.6000	0.50	40.0000		102	77 - 130			
Hexachlorobutadiene	20.2900	0.50	20.0000		101	52 - 176			
Isopropylbenzene	23.6200	0.50	20.0000		118	77 - 144			
m,p-Xylene	42.3300	1.0	40.0000		106	84 - 136			
Methylene chloride	15.1100	1.0	20.0000		75.6	72 - 150			
n-Butylbenzene	21.6800	0.50	20.0000		108	73 - 154			
n-Propylbenzene	22.4000	0.50	20.0000		112	77 - 145			
Naphthalene	16.9400	0.50	20.0000		84.7	55 - 137			
o-Xylene	40.6800	0.50	40.0000		102	79 - 135			
sec-Butylbenzene	22.6600	0.50	20.0000		113	73 - 157			
Styrene	20.3800	0.50	20.0000		102	78 - 125			
tert-Butylbenzene	22.2700	0.50	20.0000		111	78 - 149			
Tetrachloroethene	20.6300	0.50	20.0000		103	74 - 136			
Toluene	40.9600	0.50	40.0000		102	78 - 124			
trans-1,2-Dichloroethene	19.0600	0.50	20.0000		95.3	66 - 131			
Trichloroethene	18.9700	0.50	20.0000		94.8	78 - 128			
Trichlorofluoromethane	19.7600	0.50	20.0000		98.8	60 - 170			
Vinyl chloride	19.4700	0.50	20.0000		97.4	55 - 148			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>21.46</i>		<i>25.0000</i>		<i>85.8</i>	<i>51 - 157</i>			



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

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
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Batch B6E0131 - MSVOA_LL_W (continued)

LCS (B6E0131-BS1) - Continued

Prepared: 5/5/2016 Analyzed: 5/5/2016

Surrogate: 4-Bromofluorobenzene	24.82		25.0000	99.3	61 - 123
Surrogate: Dibromofluoromethane	23.68		25.0000	94.7	57 - 147
Surrogate: Toluene-d8	25.71		25.0000	103	61 - 119

LCS Dup (B6E0131-BSD1)

Prepared: 5/5/2016 Analyzed: 5/5/2016

1,1,1,2-Tetrachloroethane	23.9600	0.50	20.0000	120	76 - 132	12.6	20
1,1,1-Trichloroethane	23.0100	0.50	20.0000	115	72 - 144	9.61	20
1,1,2,2-Tetrachloroethane	23.4300	0.50	20.0000	117	70 - 120	19.9	20
1,1,2-Trichloroethane	20.0100	0.50	20.0000	100	75 - 120	14.5	20
1,1-Dichloroethane	21.4500	0.50	20.0000	107	65 - 127	9.22	20
1,1-Dichloroethene	21.2300	0.50	20.0000	106	63 - 142	7.02	20
1,1-Dichloropropene	23.2900	0.50	20.0000	116	78 - 137	6.52	20
1,2,3-Trichloropropane	20.6900	0.50	20.0000	103	73 - 118	18.0	20
1,2,3-Trichlorobenzene	20.2200	0.50	20.0000	101	53 - 164	7.23	20
1,2,4-Trichlorobenzene	20.8400	0.50	20.0000	104	58 - 144	8.56	20
1,2,4-Trimethylbenzene	22.4100	0.50	20.0000	112	75 - 140	7.26	20
1,2-Dibromo-3-chloropropane	18.4400	0.50	20.0000	92.2	61 - 131	14.4	20
1,2-Dibromoethane	20.8300	0.50	20.0000	104	74 - 125	15.2	20
1,2-Dichlorobenzene	21.6300	0.50	20.0000	108	78 - 122	9.04	20
1,2-Dichloroethane	19.1900	0.50	20.0000	96.0	70 - 126	10.5	20
1,2-Dichloropropane	20.2300	0.50	20.0000	101	69 - 120	12.4	20
1,3,5-Trimethylbenzene	23.3600	0.50	20.0000	117	73 - 145	7.32	20
1,3-Dichlorobenzene	21.6100	0.50	20.0000	108	76 - 126	6.40	20
1,3-Dichloropropane	19.9300	0.50	20.0000	99.6	76 - 117	14.9	20
1,4-Dichlorobenzene	21.9800	0.50	20.0000	110	77 - 120	8.84	20
2,2-Dichloropropane	24.0000	0.50	20.0000	120	47 - 169	11.5	20
2-Chlorotoluene	22.5900	0.50	20.0000	113	75 - 135	8.73	20
4-Chlorotoluene	22.5300	0.50	20.0000	113	70 - 133	8.90	20
4-Isopropyltoluene	23.4800	0.50	20.0000	117	72 - 153	6.33	20
Benzene	43.4300	0.50	40.0000	109	73 - 123	8.70	20
Bromobenzene	21.4800	0.50	20.0000	107	75 - 121	9.92	20
Bromodichloromethane	20.7700	0.50	20.0000	104	73 - 124	10.2	20
Bromoform	20.7000	0.50	20.0000	104	70 - 135	17.0	20
Bromomethane	17.0000	0.50	20.0000	85.0	10 - 166	20.9	20 R
Carbon tetrachloride	23.6300	0.50	20.0000	118	65 - 171	1.62	20
Chlorobenzene	21.6200	0.50	20.0000	108	80 - 121	7.88	20
Chloroethane	20.8200	0.50	20.0000	104	55 - 143	6.34	20
Chloroform	19.8300	0.50	20.0000	99.2	65 - 130	9.29	20
Chloromethane	19.2000	0.50	20.0000	96.0	21 - 141	1.50	20
cis-1,2-Dichloroethene	20.5300	0.50	20.0000	103	64 - 126	10.8	20
cis-1,3-Dichloropropene	24.1500	0.50	20.0000	121	70 - 131	11.1	20
Dibromochloromethane	22.6000	0.50	20.0000	113	74 - 125	15.0	20



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

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
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Batch B6E0131 - MSVOA_LL_W (continued)

LCS Dup (B6E0131-BSD1) - Continued

Prepared: 5/5/2016 Analyzed: 5/5/2016

Dibromomethane	19.6700	0.50	20.0000		98.4	74 - 116	13.0	20	
Dichlorodifluoromethane	21.0400	0.50	20.0000		105	40 - 186	4.27	20	
Ethylbenzene	43.3400	0.50	40.0000		108	77 - 130	6.53	20	
Hexachlorobutadiene	21.3400	0.50	20.0000		107	52 - 176	5.04	20	
Isopropylbenzene	25.9600	0.50	20.0000		130	77 - 144	9.44	20	
m,p-Xylene	44.8500	1.0	40.0000		112	84 - 136	5.78	20	
Methylene chloride	16.3800	1.0	20.0000		81.9	72 - 150	8.07	20	
n-Butylbenzene	22.9400	0.50	20.0000		115	73 - 154	5.65	20	
n-Propylbenzene	23.9900	0.50	20.0000		120	77 - 145	6.85	20	
Naphthalene	19.5600	0.50	20.0000		97.8	55 - 137	14.4	20	
o-Xylene	43.3400	0.50	40.0000		108	79 - 135	6.33	20	
sec-Butylbenzene	24.1400	0.50	20.0000		121	73 - 157	6.32	20	
Styrene	21.9200	0.50	20.0000		110	78 - 125	7.28	20	
tert-Butylbenzene	24.2100	0.50	20.0000		121	78 - 149	8.35	20	
Tetrachloroethene	22.6200	0.50	20.0000		113	74 - 136	9.20	20	
Toluene	44.2900	0.50	40.0000		111	78 - 124	7.81	20	
trans-1,2-Dichloroethene	20.6700	0.50	20.0000		103	66 - 131	8.10	20	
Trichloroethene	20.6800	0.50	20.0000		103	78 - 128	8.63	20	
Trichlorofluoromethane	17.9400	0.50	20.0000		89.7	60 - 170	9.66	20	
Vinyl chloride	19.9700	0.50	20.0000		99.8	55 - 148	2.54	20	
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<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.06</i>		<i>25.0000</i>		<i>92.2</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.22</i>		<i>25.0000</i>		<i>96.9</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.24</i>		<i>25.0000</i>		<i>97.0</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.54</i>		<i>25.0000</i>		<i>102</i>	<i>61 - 119</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 : 05/16/2016

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	RPD Limit	Notes
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Batch B6E0147 - MSVOA_LL_W

Blank (B6E0147-BLK1)

Prepared: 5/6/2016 Analyzed: 5/6/2016

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				



Certificate of Analysis

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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
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Batch B6E0147 - MSVOA_LL_W (continued)

Blank (B6E0147-BLK1) - Continued

Prepared: 5/6/2016 Analyzed: 5/6/2016

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				

<i>Surrogate: 1,2-Dichloroethane-d4</i>	25.09		25.0000		100	51 - 157			
<i>Surrogate: 4-Bromofluorobenzene</i>	23.91		25.0000		95.6	61 - 123			
<i>Surrogate: Dibromofluoromethane</i>	27.12		25.0000		108	57 - 147			
<i>Surrogate: Toluene-d8</i>	25.78		25.0000		103	61 - 119			

LCS (B6E0147-BS1)

Prepared: 5/6/2016 Analyzed: 5/6/2016

1,1,1,2-Tetrachloroethane	25.2400	0.50	20.0000		126	76 - 132			
1,1,1-Trichloroethane	24.2300	0.50	20.0000		121	72 - 144			
1,1,2,2-Tetrachloroethane	23.1300	0.50	20.0000		116	70 - 120			
1,1,2-Trichloroethane	20.5000	0.50	20.0000		102	75 - 120			
1,1-Dichloroethane	22.8900	0.50	20.0000		114	65 - 127			
1,1-Dichloroethene	23.2200	0.50	20.0000		116	63 - 142			
1,1-Dichloropropene	24.4400	0.50	20.0000		122	78 - 137			
1,2,3-Trichloropropane	19.9900	0.50	20.0000		100	73 - 118			
1,2,3-Trichlorobenzene	21.3000	0.50	20.0000		106	53 - 164			
1,2,4-Trichlorobenzene	21.9600	0.50	20.0000		110	58 - 144			
1,2,4-Trimethylbenzene	23.7800	0.50	20.0000		119	75 - 140			
1,2-Dibromo-3-chloropropane	18.2400	0.50	20.0000		91.2	61 - 131			
1,2-Dibromoethane	21.0300	0.50	20.0000		105	74 - 125			
1,2-Dichlorobenzene	22.6800	0.50	20.0000		113	78 - 122			
1,2-Dichloroethane	20.0800	0.50	20.0000		100	70 - 126			
1,2-Dichloropropane	20.6100	0.50	20.0000		103	69 - 120			
1,3,5-Trimethylbenzene	24.6900	0.50	20.0000		123	73 - 145			
1,3-Dichlorobenzene	23.0700	0.50	20.0000		115	76 - 126			
1,3-Dichloropropane	19.9000	0.50	20.0000		99.5	76 - 117			



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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
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Batch B6E0147 - MSVOA_LL_W (continued)

LCS (B6E0147-BS1) - Continued

Prepared: 5/6/2016 Analyzed: 5/6/2016

1,4-Dichlorobenzene	23.1500	0.50	20.0000		116	77 - 120			
2,2-Dichloropropane	25.5500	0.50	20.0000		128	47 - 169			
2-Chlorotoluene	23.8500	0.50	20.0000		119	75 - 135			
4-Chlorotoluene	23.6400	0.50	20.0000		118	70 - 133			
4-Isopropyltoluene	25.0800	0.50	20.0000		125	72 - 153			
Benzene	45.1700	0.50	40.0000		113	73 - 123			
Bromobenzene	22.3600	0.50	20.0000		112	75 - 121			
Bromodichloromethane	22.0500	0.50	20.0000		110	73 - 124			
Bromoform	20.9400	0.50	20.0000		105	70 - 135			
Bromomethane	14.5200	0.50	20.0000		72.6	10 - 166			
Carbon tetrachloride	25.9000	0.50	20.0000		130	65 - 171			
Chlorobenzene	22.6000	0.50	20.0000		113	80 - 121			
Chloroethane	21.4900	0.50	20.0000		107	55 - 143			
Chloroform	21.3100	0.50	20.0000		107	65 - 130			
Chloromethane	27.3600	0.50	20.0000		137	21 - 141			
cis-1,2-Dichloroethene	21.8200	0.50	20.0000		109	64 - 126			
cis-1,3-Dichloropropene	25.5100	0.50	20.0000		128	70 - 131			
Dibromochloromethane	22.7600	0.50	20.0000		114	74 - 125			
Dibromomethane	19.7300	0.50	20.0000		98.6	74 - 116			
Dichlorodifluoromethane	22.8300	0.50	20.0000		114	40 - 186			
Ethylbenzene	45.9200	0.50	40.0000		115	77 - 130			
Hexachlorobutadiene	24.0800	0.50	20.0000		120	52 - 176			
Isopropylbenzene	26.7700	0.50	20.0000		134	77 - 144			
m,p-Xylene	48.2400	1.0	40.0000		121	84 - 136			
Methylene chloride	17.7700	1.0	20.0000		88.8	72 - 150			
n-Butylbenzene	25.1100	0.50	20.0000		126	73 - 154			
n-Propylbenzene	25.4200	0.50	20.0000		127	77 - 145			
Naphthalene	20.3300	0.50	20.0000		102	55 - 137			
o-Xylene	46.4200	0.50	40.0000		116	79 - 135			
sec-Butylbenzene	25.9300	0.50	20.0000		130	73 - 157			
Styrene	23.4400	0.50	20.0000		117	78 - 125			
tert-Butylbenzene	25.4700	0.50	20.0000		127	78 - 149			
Tetrachloroethene	23.4800	0.50	20.0000		117	74 - 136			
Toluene	47.0700	0.50	40.0000		118	78 - 124			
trans-1,2-Dichloroethene	22.5300	0.50	20.0000		113	66 - 131			
Trichloroethene	21.2500	0.50	20.0000		106	78 - 128			
Trichlorofluoromethane	23.7100	0.50	20.0000		119	60 - 170			
Vinyl chloride	22.7900	0.50	20.0000		114	55 - 148			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>22.81</i>		<i>25.0000</i>		<i>91.2</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>25.05</i>		<i>25.0000</i>		<i>100</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.47</i>		<i>25.0000</i>		<i>97.9</i>	<i>57 - 147</i>			



Certificate of Analysis

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San Diego , CA 92122

Reported : 05/16/2016

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
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Batch B6E0147 - MSVOA_LL_W (continued)

LCS (B6E0147-BS1) - Continued

Prepared: 5/6/2016 Analyzed: 5/6/2016

Surrogate: Toluene-d8 26.03 25.0000

104 61 - 119

LCS Dup (B6E0147-BSD1)

Prepared: 5/6/2016 Analyzed: 5/6/2016

1,1,1,2-Tetrachloroethane	25.7200	0.50	20.0000	129	76 - 132	1.88	20	
1,1,1-Trichloroethane	24.6600	0.50	20.0000	123	72 - 144	1.76	20	
1,1,2,2-Tetrachloroethane	25.3700	0.50	20.0000	127	70 - 120	9.24	20	L4
1,1,2-Trichloroethane	22.0900	0.50	20.0000	110	75 - 120	7.47	20	
1,1-Dichloroethane	23.2100	0.50	20.0000	116	65 - 127	1.39	20	
1,1-Dichloroethene	23.4700	0.50	20.0000	117	63 - 142	1.07	20	
1,1-Dichloropropene	24.8400	0.50	20.0000	124	78 - 137	1.62	20	
1,2,3-Trichloropropane	21.9000	0.50	20.0000	110	73 - 118	9.12	20	
1,2,3-Trichlorobenzene	23.0400	0.50	20.0000	115	53 - 164	7.85	20	
1,2,4-Trichlorobenzene	22.9400	0.50	20.0000	115	58 - 144	4.37	20	
1,2,4-Trimethylbenzene	24.1600	0.50	20.0000	121	75 - 140	1.59	20	
1,2-Dibromo-3-chloropropane	20.5900	0.50	20.0000	103	61 - 131	12.1	20	
1,2-Dibromoethane	22.7400	0.50	20.0000	114	74 - 125	7.81	20	
1,2-Dichlorobenzene	23.3600	0.50	20.0000	117	78 - 122	2.95	20	
1,2-Dichloroethane	21.5200	0.50	20.0000	108	70 - 126	6.92	20	
1,2-Dichloropropane	21.2900	0.50	20.0000	106	69 - 120	3.25	20	
1,3,5-Trimethylbenzene	24.8100	0.50	20.0000	124	73 - 145	0.485	20	
1,3-Dichlorobenzene	23.5500	0.50	20.0000	118	76 - 126	2.06	20	
1,3-Dichloropropane	21.0100	0.50	20.0000	105	76 - 117	5.43	20	
1,4-Dichlorobenzene	23.7100	0.50	20.0000	119	77 - 120	2.39	20	
2,2-Dichloropropane	25.5300	0.50	20.0000	128	47 - 169	0.0783	20	
2-Chlorotoluene	23.7300	0.50	20.0000	119	75 - 135	0.504	20	
4-Chlorotoluene	24.0200	0.50	20.0000	120	70 - 133	1.59	20	
4-Isopropyltoluene	25.2600	0.50	20.0000	126	72 - 153	0.715	20	
Benzene	45.9900	0.50	40.0000	115	73 - 123	1.80	20	
Bromobenzene	22.8400	0.50	20.0000	114	75 - 121	2.12	20	
Bromodichloromethane	22.7500	0.50	20.0000	114	73 - 124	3.13	20	
Bromoform	22.1300	0.50	20.0000	111	70 - 135	5.53	20	
Bromomethane	16.7500	0.50	20.0000	83.8	10 - 166	14.3	20	
Carbon tetrachloride	25.7900	0.50	20.0000	129	65 - 171	0.426	20	
Chlorobenzene	23.1800	0.50	20.0000	116	80 - 121	2.53	20	
Chloroethane	23.8300	0.50	20.0000	119	55 - 143	10.3	20	
Chloroform	21.8600	0.50	20.0000	109	65 - 130	2.55	20	
Chloromethane	28.3700	0.50	20.0000	142	21 - 141	3.62	20	L4
cis-1,2-Dichloroethene	22.2000	0.50	20.0000	111	64 - 126	1.73	20	
cis-1,3-Dichloropropene	26.1700	0.50	20.0000	131	70 - 131	2.55	20	
Dibromochloromethane	23.7300	0.50	20.0000	119	74 - 125	4.17	20	
Dibromomethane	21.1300	0.50	20.0000	106	74 - 116	6.85	20	
Dichlorodifluoromethane	23.8000	0.50	20.0000	119	40 - 186	4.16	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	% Rec Limits	RPD	RPD Limit	Notes
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Batch B6E0147 - MSVOA_LL_W (continued)

LCS Dup (B6E0147-BSD1) - Continued

Prepared: 5/6/2016 Analyzed: 5/6/2016

Ethylbenzene	46.8600	0.50	40.0000		117	77 - 130	2.03	20	
Hexachlorobutadiene	23.9200	0.50	20.0000		120	52 - 176	0.667	20	
Isopropylbenzene	26.8600	0.50	20.0000		134	77 - 144	0.336	20	
m,p-Xylene	49.1000	1.0	40.0000		123	84 - 136	1.77	20	
Methylene chloride	18.4900	1.0	20.0000		92.4	72 - 150	3.97	20	
n-Butylbenzene	25.0600	0.50	20.0000		125	73 - 154	0.199	20	
n-Propylbenzene	25.5500	0.50	20.0000		128	77 - 145	0.510	20	
Naphthalene	23.1300	0.50	20.0000		116	55 - 137	12.9	20	
o-Xylene	47.3300	0.50	40.0000		118	79 - 135	1.94	20	
sec-Butylbenzene	25.9500	0.50	20.0000		130	73 - 157	0.0771	20	
Styrene	24.2000	0.50	20.0000		121	78 - 125	3.19	20	
tert-Butylbenzene	25.5500	0.50	20.0000		128	78 - 149	0.314	20	
Tetrachloroethene	23.7900	0.50	20.0000		119	74 - 136	1.31	20	
Toluene	48.2200	0.50	40.0000		121	78 - 124	2.41	20	
trans-1,2-Dichloroethene	22.5800	0.50	20.0000		113	66 - 131	0.222	20	
Trichloroethene	21.7200	0.50	20.0000		109	78 - 128	2.19	20	
Trichlorofluoromethane	24.0700	0.50	20.0000		120	60 - 170	1.51	20	
Vinyl chloride	23.3000	0.50	20.0000		116	55 - 148	2.21	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.00</i>		<i>25.0000</i>		<i>92.0</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>25.04</i>		<i>25.0000</i>		<i>100</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.55</i>		<i>25.0000</i>		<i>98.2</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.91</i>		<i>25.0000</i>		<i>104</i>	<i>61 - 119</i>			

Matrix Spike (B6E0147-MS1)

Source: 1601592-02

Prepared: 5/6/2016 Analyzed: 5/6/2016

1,1,1,2-Tetrachloroethane	525.600	10	400.000	ND	131	76 - 132			
1,1,1-Trichloroethane	512.200	10	400.000	ND	128	72 - 144			
1,1,1,2,2-Tetrachloroethane	515.800	10	400.000	ND	129	70 - 120			R
1,1,2-Trichloroethane	457.400	10	400.000	11.0000	112	75 - 120			
1,1-Dichloroethane	499.200	10	400.000	24.8000	119	65 - 127			
1,1-Dichloroethene	1821.60	10	400.000	1426.00	98.9	63 - 142			
1,1-Dichloropropene	500.600	10	400.000	ND	125	78 - 137			
1,2,3-Trichloropropane	448.600	10	400.000	ND	112	73 - 118			
1,2,3-Trichlorobenzene	451.200	10	400.000	ND	113	53 - 164			
1,2,4-Trichlorobenzene	453.400	10	400.000	ND	113	58 - 144			
1,2,4-Trimethylbenzene	487.400	10	400.000	ND	122	75 - 140			
1,2-Dibromo-3-chloropropane	404.200	10	400.000	ND	101	61 - 131			
1,2-Dibromoethane	459.000	10	400.000	ND	115	74 - 125			
1,2-Dichlorobenzene	478.400	10	400.000	ND	120	78 - 122			
1,2-Dichloroethane	438.000	10	400.000	ND	110	70 - 126			
1,2-Dichloropropane	431.000	10	400.000	ND	108	69 - 120			
1,3,5-Trimethylbenzene	511.800	10	400.000	ND	128	73 - 145			



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

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
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Batch B6E0147 - MSVOA_LL_W (continued)

Matrix Spike (B6E0147-MS1) - Continued

Source: 1601592-02

Prepared: 5/6/2016 Analyzed: 5/6/2016

1,3-Dichlorobenzene	482.200	10	400.000	ND	121	76 - 126			
1,3-Dichloropropane	430.400	10	400.000	ND	108	76 - 117			
1,4-Dichlorobenzene	484.800	10	400.000	ND	121	77 - 120			R
2,2-Dichloropropane	543.600	10	400.000	ND	136	47 - 169			
2-Chlorotoluene	495.800	10	400.000	ND	124	75 - 135			
4-Chlorotoluene	490.000	10	400.000	ND	122	77 - 130			
4-Isopropyltoluene	514.800	10	400.000	ND	129	72 - 153			
Benzene	941.800	10	800.000	ND	118	73 - 123			
Bromobenzene	473.400	10	400.000	ND	118	75 - 121			
Bromodichloromethane	460.000	10	400.000	ND	115	73 - 124			
Bromoform	451.000	10	400.000	ND	113	70 - 135			
Bromomethane	475.600	10	400.000	ND	119	10 - 166			
Carbon tetrachloride	536.000	10	400.000	ND	134	65 - 171			
Chlorobenzene	478.000	10	400.000	ND	120	80 - 121			
Chloroethane	471.000	10	400.000	ND	118	55 - 143			
Chloroform	448.200	10	400.000	ND	112	65 - 130			
Chloromethane	462.400	10	400.000	ND	116	21 - 141			
cis-1,2-Dichloroethene	457.800	10	400.000	ND	114	64 - 126			
cis-1,3-Dichloropropene	532.000	10	400.000	ND	133	70 - 131			R
Dibromochloromethane	486.600	10	400.000	ND	122	74 - 125			
Dibromomethane	425.200	10	400.000	ND	106	74 - 116			
Dichlorodifluoromethane	463.000	10	400.000	ND	116	40 - 186			
Ethylbenzene	954.400	10	800.000	ND	119	77 - 130			
Hexachlorobutadiene	471.200	10	400.000	ND	118	52 - 176			
Isopropylbenzene	555.400	10	400.000	ND	139	77 - 144			
m,p-Xylene	985.000	20	800.000	ND	123	84 - 136			
Methylene chloride	376.600	20	400.000	ND	94.2	72 - 150			
n-Butylbenzene	502.600	10	400.000	ND	126	73 - 154			
n-Propylbenzene	525.000	10	400.000	ND	131	77 - 145			
Naphthalene	411.200	10	400.000	ND	103	55 - 137			
o-Xylene	951.200	10	800.000	ND	119	79 - 135			
sec-Butylbenzene	530.400	10	400.000	ND	133	73 - 157			
Styrene	483.000	10	400.000	ND	121	78 - 125			
tert-Butylbenzene	521.600	10	400.000	ND	130	78 - 149			
Tetrachloroethene	488.000	10	400.000	ND	122	74 - 136			
Toluene	982.800	10	800.000	ND	123	78 - 124			
trans-1,2-Dichloroethene	470.800	10	400.000	ND	118	66 - 131			
Trichloroethene	460.800	10	400.000	11.8000	112	78 - 128			
Trichlorofluoromethane	405.200	10	400.000	ND	101	60 - 170			
Vinyl chloride	445.200	10	400.000	ND	111	55 - 148			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	23.77		25.0000		95.1	51 - 157			



Certificate of Analysis

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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 Limit	Notes
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Batch B6E0147 - MSVOA_LL_W (continued)

Matrix Spike (B6E0147-MS1) - Continued

Source: 1601592-02

Prepared: 5/6/2016 Analyzed: 5/6/2016

Surrogate: 4-Bromofluorobenzene	24.57	25.0000	98.3	61 - 123
Surrogate: Dibromofluoromethane	24.84	25.0000	99.4	57 - 147
Surrogate: Toluene-d8	26.11	25.0000	104	61 - 119

Matrix Spike Dup (B6E0147-MSD1)

Source: 1601592-02

Prepared: 5/6/2016 Analyzed: 5/6/2016

1,1,1,2-Tetrachloroethane	537.000	10	400.000	ND	134	76 - 132	2.15	20	R
1,1,1-Trichloroethane	517.200	10	400.000	ND	129	72 - 144	0.971	20	
1,1,2,2-Tetrachloroethane	512.600	10	400.000	ND	128	70 - 120	0.622	20	R
1,1,2-Trichloroethane	461.600	10	400.000	11.0000	113	75 - 120	0.914	20	
1,1-Dichloroethane	506.000	10	400.000	24.8000	120	65 - 127	1.35	20	
1,1-Dichloroethene	1803.60	10	400.000	1426.00	94.4	63 - 142	0.993	20	
1,1-Dichloropropene	517.600	10	400.000	ND	129	78 - 137	3.34	20	
1,2,3-Trichloropropane	447.000	10	400.000	ND	112	73 - 118	0.357	20	
1,2,3-Trichlorobenzene	464.400	10	400.000	ND	116	53 - 164	2.88	20	
1,2,4-Trichlorobenzene	468.400	10	400.000	ND	117	58 - 144	3.25	20	
1,2,4-Trimethylbenzene	502.200	10	400.000	ND	126	75 - 140	2.99	20	
1,2-Dibromo-3-chloropropane	384.000	10	400.000	ND	96.0	61 - 131	5.13	20	
1,2-Dibromoethane	466.200	10	400.000	ND	117	74 - 125	1.56	20	
1,2-Dichlorobenzene	484.000	10	400.000	ND	121	78 - 122	1.16	20	
1,2-Dichloroethane	439.400	10	400.000	ND	110	70 - 126	0.319	20	
1,2-Dichloropropane	440.200	10	400.000	ND	110	69 - 120	2.11	20	
1,3,5-Trimethylbenzene	520.400	10	400.000	ND	130	73 - 145	1.67	20	
1,3-Dichlorobenzene	493.400	10	400.000	ND	123	76 - 126	2.30	20	
1,3-Dichloropropane	436.000	10	400.000	ND	109	76 - 117	1.29	20	
1,4-Dichlorobenzene	492.400	10	400.000	ND	123	77 - 120	1.56	20	R
2,2-Dichloropropane	543.000	10	400.000	ND	136	47 - 169	0.110	20	
2-Chlorotoluene	498.400	10	400.000	ND	125	75 - 135	0.523	20	
4-Chlorotoluene	497.600	10	400.000	ND	124	77 - 130	1.54	20	
4-Isopropyltoluene	527.400	10	400.000	ND	132	72 - 153	2.42	20	
Benzene	965.800	10	800.000	ND	121	73 - 123	2.52	20	
Bromobenzene	480.600	10	400.000	ND	120	75 - 121	1.51	20	
Bromodichloromethane	465.000	10	400.000	ND	116	73 - 124	1.08	20	
Bromoform	441.400	10	400.000	ND	110	70 - 135	2.15	20	
Bromomethane	491.600	10	400.000	ND	123	10 - 166	3.31	20	
Carbon tetrachloride	531.800	10	400.000	ND	133	65 - 171	0.787	20	
Chlorobenzene	486.000	10	400.000	ND	122	80 - 121	1.66	20	R
Chloroethane	417.400	10	400.000	ND	104	55 - 143	12.1	20	
Chloroform	452.800	10	400.000	ND	113	65 - 130	1.02	20	
Chloromethane	494.200	10	400.000	ND	124	21 - 141	6.65	20	
cis-1,2-Dichloroethene	466.000	10	400.000	ND	116	64 - 126	1.78	20	
cis-1,3-Dichloropropene	533.200	10	400.000	ND	133	70 - 131	0.225	20	R
Dibromochloromethane	485.800	10	400.000	ND	121	74 - 125	0.165	20	



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Reported : 05/16/2016

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
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Batch B6E0147 - MSVOA_LL_W (continued)

Matrix Spike Dup (B6E0147-MSD1) - Continued

Source: 1601592-02

Prepared: 5/6/2016 Analyzed: 5/6/2016

Dibromomethane	433.800	10	400.000	ND	108	74 - 116	2.00	20	
Dichlorodifluoromethane	474.400	10	400.000	ND	119	40 - 186	2.43	20	
Ethylbenzene	973.000	10	800.000	ND	122	77 - 130	1.93	20	
Hexachlorobutadiene	481.000	10	400.000	ND	120	52 - 176	2.06	20	
Isopropylbenzene	563.000	10	400.000	ND	141	77 - 144	1.36	20	
m,p-Xylene	1005.80	20	800.000	ND	126	84 - 136	2.09	20	
Methylene chloride	380.800	20	400.000	ND	95.2	72 - 150	1.11	20	
n-Butylbenzene	520.000	10	400.000	ND	130	73 - 154	3.40	20	
n-Propylbenzene	530.400	10	400.000	ND	133	77 - 145	1.02	20	
Naphthalene	434.000	10	400.000	ND	108	55 - 137	5.40	20	
o-Xylene	969.400	10	800.000	ND	121	79 - 135	1.90	20	
sec-Butylbenzene	538.000	10	400.000	ND	134	73 - 157	1.42	20	
Styrene	496.000	10	400.000	ND	124	78 - 125	2.66	20	
tert-Butylbenzene	531.200	10	400.000	ND	133	78 - 149	1.82	20	
Tetrachloroethene	501.200	10	400.000	ND	125	74 - 136	2.67	20	
Toluene	1001.00	10	800.000	ND	125	78 - 124	1.83	20	R
trans-1,2-Dichloroethene	474.000	10	400.000	ND	118	66 - 131	0.677	20	
Trichloroethene	479.400	10	400.000	11.8000	117	78 - 128	3.96	20	
Trichlorofluoromethane	458.600	10	400.000	ND	115	60 - 170	12.4	20	
Vinyl chloride	477.600	10	400.000	ND	119	55 - 148	7.02	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>22.73</i>		<i>25.0000</i>		<i>90.9</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>23.94</i>		<i>25.0000</i>		<i>95.8</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.12</i>		<i>25.0000</i>		<i>96.5</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.44</i>		<i>25.0000</i>		<i>102</i>	<i>61 - 119</i>			



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San Diego , CA 92122

Reported : 05/16/2016

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	Limits Limits	RPD RPD	RPD Limit	Notes
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Batch B6E0148 - MSVOA_LL_W

Blank (B6E0148-BLK1)

Prepared: 5/7/2016 Analyzed: 5/7/2016

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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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
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Batch B6E0148 - MSVOA_LL_W (continued)

Blank (B6E0148-BLK1) - Continued

Prepared: 5/7/2016 Analyzed: 5/7/2016

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				

<i>Surrogate: 1,2-Dichloroethane-d4</i>	23.60		25.0000		94.4	51 - 157			
<i>Surrogate: 4-Bromofluorobenzene</i>	23.75		25.0000		95.0	61 - 123			
<i>Surrogate: Dibromofluoromethane</i>	25.56		25.0000		102	57 - 147			
<i>Surrogate: Toluene-d8</i>	25.52		25.0000		102	61 - 119			

LCS (B6E0148-BS1)

Prepared: 5/7/2016 Analyzed: 5/7/2016

1,1,1,2-Tetrachloroethane	23.9400	0.50	20.0000		120	76 - 132			
1,1,1-Trichloroethane	23.0300	0.50	20.0000		115	72 - 144			
1,1,2,2-Tetrachloroethane	21.6400	0.50	20.0000		108	70 - 120			
1,1,2-Trichloroethane	18.7800	0.50	20.0000		93.9	75 - 120			
1,1-Dichloroethane	21.7100	0.50	20.0000		109	65 - 127			
1,1-Dichloroethene	22.3900	0.50	20.0000		112	63 - 142			
1,1-Dichloropropene	23.3300	0.50	20.0000		117	78 - 137			
1,2,3-Trichloropropane	18.8700	0.50	20.0000		94.4	73 - 118			
1,2,3-Trichlorobenzene	20.5300	0.50	20.0000		103	53 - 164			
1,2,4-Trichlorobenzene	21.2700	0.50	20.0000		106	58 - 144			
1,2,4-Trimethylbenzene	23.0600	0.50	20.0000		115	75 - 140			
1,2-Dibromo-3-chloropropane	15.7100	0.50	20.0000		78.6	61 - 131			
1,2-Dibromoethane	19.0900	0.50	20.0000		95.4	74 - 125			
1,2-Dichlorobenzene	22.2000	0.50	20.0000		111	78 - 122			
1,2-Dichloroethane	18.7000	0.50	20.0000		93.5	70 - 126			
1,2-Dichloropropane	19.3200	0.50	20.0000		96.6	69 - 120			
1,3,5-Trimethylbenzene	24.3500	0.50	20.0000		122	73 - 145			
1,3-Dichlorobenzene	22.7700	0.50	20.0000		114	76 - 126			
1,3-Dichloropropane	18.6500	0.50	20.0000		93.2	76 - 117			



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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
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Batch B6E0148 - MSVOA_LL_W (continued)

LCS (B6E0148-BS1) - Continued

Prepared: 5/7/2016 Analyzed: 5/7/2016

1,4-Dichlorobenzene	22.5200	0.50	20.0000		113	77 - 120			
2,2-Dichloropropane	24.8000	0.50	20.0000		124	47 - 169			
2-Chlorotoluene	23.5300	0.50	20.0000		118	75 - 135			
4-Chlorotoluene	23.3600	0.50	20.0000		117	70 - 133			
4-Isopropyltoluene	24.5800	0.50	20.0000		123	72 - 153			
Benzene	42.6200	0.50	40.0000		107	73 - 123			
Bromobenzene	21.8300	0.50	20.0000		109	75 - 121			
Bromodichloromethane	20.4400	0.50	20.0000		102	73 - 124			
Bromoform	19.1400	0.50	20.0000		95.7	70 - 135			
Bromomethane	20.4100	0.50	20.0000		102	10 - 166			
Carbon tetrachloride	24.1700	0.50	20.0000		121	65 - 171			
Chlorobenzene	21.8000	0.50	20.0000		109	80 - 121			
Chloroethane	20.9300	0.50	20.0000		105	55 - 143			
Chloroform	20.4900	0.50	20.0000		102	65 - 130			
Chloromethane	21.8500	0.50	20.0000		109	21 - 141			
cis-1,2-Dichloroethene	20.9300	0.50	20.0000		105	64 - 126			
cis-1,3-Dichloropropene	23.8000	0.50	20.0000		119	70 - 131			
Dibromochloromethane	21.1200	0.50	20.0000		106	74 - 125			
Dibromomethane	18.0100	0.50	20.0000		90.0	74 - 116			
Dichlorodifluoromethane	20.5100	0.50	20.0000		103	40 - 186			
Ethylbenzene	44.1000	0.50	40.0000		110	77 - 130			
Hexachlorobutadiene	23.1000	0.50	20.0000		116	52 - 176			
Isopropylbenzene	26.4800	0.50	20.0000		132	77 - 144			
m,p-Xylene	45.8800	1.0	40.0000		115	84 - 136			
Methylene chloride	16.9400	1.0	20.0000		84.7	72 - 150			
n-Butylbenzene	24.2400	0.50	20.0000		121	73 - 154			
n-Propylbenzene	25.0900	0.50	20.0000		125	77 - 145			
Naphthalene	18.0100	0.50	20.0000		90.0	55 - 137			
o-Xylene	43.9800	0.50	40.0000		110	79 - 135			
sec-Butylbenzene	25.4300	0.50	20.0000		127	73 - 157			
Styrene	22.4200	0.50	20.0000		112	78 - 125			
tert-Butylbenzene	25.1700	0.50	20.0000		126	78 - 149			
Tetrachloroethene	23.1600	0.50	20.0000		116	74 - 136			
Toluene	44.4200	0.50	40.0000		111	78 - 124			
trans-1,2-Dichloroethene	21.7100	0.50	20.0000		109	66 - 131			
Trichloroethene	19.9900	0.50	20.0000		100	78 - 128			
Trichlorofluoromethane	22.3800	0.50	20.0000		112	60 - 170			
Vinyl chloride	21.5400	0.50	20.0000		108	55 - 148			
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Surrogate: 1,2-Dichloroethane-d4	21.94		25.0000		87.8	51 - 157			
Surrogate: 4-Bromofluorobenzene	24.49		25.0000		98.0	61 - 123			
Surrogate: Dibromofluoromethane	24.08		25.0000		96.3	57 - 147			



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

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
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Batch B6E0148 - MSVOA_LL_W (continued)

LCS (B6E0148-BS1) - Continued

Prepared: 5/7/2016 Analyzed: 5/7/2016

Surrogate: Toluene-d8 25.66 25.0000

103 61 - 119

LCS Dup (B6E0148-BSD1)

Prepared: 5/7/2016 Analyzed: 5/7/2016

1,1,1,2-Tetrachloroethane	25.3400	0.50	20.0000	127	76 - 132	5.68	20
1,1,1-Trichloroethane	24.2900	0.50	20.0000	121	72 - 144	5.33	20
1,1,2,2-Tetrachloroethane	23.8900	0.50	20.0000	119	70 - 120	9.88	20
1,1,2-Trichloroethane	21.0400	0.50	20.0000	105	75 - 120	11.4	20
1,1-Dichloroethane	22.9500	0.50	20.0000	115	65 - 127	5.55	20
1,1-Dichloroethene	23.5700	0.50	20.0000	118	63 - 142	5.13	20
1,1-Dichloropropene	24.4700	0.50	20.0000	122	78 - 137	4.77	20
1,2,3-Trichloropropane	20.7600	0.50	20.0000	104	73 - 118	9.54	20
1,2,3-Trichlorobenzene	21.5000	0.50	20.0000	108	53 - 164	4.62	20
1,2,4-Trichlorobenzene	21.6500	0.50	20.0000	108	58 - 144	1.77	20
1,2,4-Trimethylbenzene	23.2500	0.50	20.0000	116	75 - 140	0.821	20
1,2-Dibromo-3-chloropropane	17.9700	0.50	20.0000	89.8	61 - 131	13.4	20
1,2-Dibromoethane	21.7800	0.50	20.0000	109	74 - 125	13.2	20
1,2-Dichlorobenzene	22.6100	0.50	20.0000	113	78 - 122	1.83	20
1,2-Dichloroethane	20.2700	0.50	20.0000	101	70 - 126	8.06	20
1,2-Dichloropropane	20.8900	0.50	20.0000	104	69 - 120	7.81	20
1,3,5-Trimethylbenzene	24.4100	0.50	20.0000	122	73 - 145	0.246	20
1,3-Dichlorobenzene	22.9400	0.50	20.0000	115	76 - 126	0.744	20
1,3-Dichloropropane	20.2800	0.50	20.0000	101	76 - 117	8.37	20
1,4-Dichlorobenzene	23.2100	0.50	20.0000	116	77 - 120	3.02	20
2,2-Dichloropropane	25.5300	0.50	20.0000	128	47 - 169	2.90	20
2-Chlorotoluene	23.4200	0.50	20.0000	117	75 - 135	0.469	20
4-Chlorotoluene	23.5100	0.50	20.0000	118	70 - 133	0.640	20
4-Isopropyltoluene	24.6100	0.50	20.0000	123	72 - 153	0.122	20
Benzene	45.6400	0.50	40.0000	114	73 - 123	6.84	20
Bromobenzene	22.5000	0.50	20.0000	112	75 - 121	3.02	20
Bromodichloromethane	21.9400	0.50	20.0000	110	73 - 124	7.08	20
Bromoform	20.9500	0.50	20.0000	105	70 - 135	9.03	20
Bromomethane	24.0200	0.50	20.0000	120	10 - 166	16.3	20
Carbon tetrachloride	25.1600	0.50	20.0000	126	65 - 171	4.01	20
Chlorobenzene	22.8200	0.50	20.0000	114	80 - 121	4.57	20
Chloroethane	18.9400	0.50	20.0000	94.7	55 - 143	9.98	20
Chloroform	21.2600	0.50	20.0000	106	65 - 130	3.69	20
Chloromethane	23.4800	0.50	20.0000	117	21 - 141	7.19	20
cis-1,2-Dichloroethene	22.0700	0.50	20.0000	110	64 - 126	5.30	20
cis-1,3-Dichloropropene	25.4300	0.50	20.0000	127	70 - 131	6.62	20
Dibromochloromethane	22.6700	0.50	20.0000	113	74 - 125	7.08	20
Dibromomethane	20.0400	0.50	20.0000	100	74 - 116	10.7	20
Dichlorodifluoromethane	22.0600	0.50	20.0000	110	40 - 186	7.28	20



Certificate of Analysis

Hargis & Associates, Inc.

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San Diego , CA 92122

Reported : 05/16/2016

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
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Batch B6E0148 - MSVOA_LL_W (continued)

LCS Dup (B6E0148-BSD1) - Continued

Prepared: 5/7/2016 Analyzed: 5/7/2016

Ethylbenzene	45.7500	0.50	40.0000		114	77 - 130	3.67	20	
Hexachlorobutadiene	22.4800	0.50	20.0000		112	52 - 176	2.72	20	
Isopropylbenzene	26.5800	0.50	20.0000		133	77 - 144	0.377	20	
m,p-Xylene	47.3300	1.0	40.0000		118	84 - 136	3.11	20	
Methylene chloride	18.1600	1.0	20.0000		90.8	72 - 150	6.95	20	
n-Butylbenzene	24.3600	0.50	20.0000		122	73 - 154	0.494	20	
n-Propylbenzene	24.9900	0.50	20.0000		125	77 - 145	0.399	20	
Naphthalene	20.1800	0.50	20.0000		101	55 - 137	11.4	20	
o-Xylene	45.6400	0.50	40.0000		114	79 - 135	3.70	20	
sec-Butylbenzene	25.2500	0.50	20.0000		126	73 - 157	0.710	20	
Styrene	23.1900	0.50	20.0000		116	78 - 125	3.38	20	
tert-Butylbenzene	24.9700	0.50	20.0000		125	78 - 149	0.798	20	
Tetrachloroethene	23.3800	0.50	20.0000		117	74 - 136	0.945	20	
Toluene	47.3500	0.50	40.0000		118	78 - 124	6.39	20	
trans-1,2-Dichloroethene	22.6700	0.50	20.0000		113	66 - 131	4.33	20	
Trichloroethene	21.2300	0.50	20.0000		106	78 - 128	6.02	20	
Trichlorofluoromethane	20.2700	0.50	20.0000		101	60 - 170	9.89	20	
Vinyl chloride	22.3400	0.50	20.0000		112	55 - 148	3.65	20	
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<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>22.81</i>		<i>25.0000</i>		<i>91.2</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.16</i>		<i>25.0000</i>		<i>96.6</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.44</i>		<i>25.0000</i>		<i>97.8</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.83</i>		<i>25.0000</i>		<i>103</i>	<i>61 - 119</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 : 05/16/2016

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	Limits Limits	RPD RPD	RPD Limit	Notes
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Batch B6E0195 - MSVOA_LL_W

Blank (B6E0195-BLK1)

Prepared: 5/10/2016 Analyzed: 5/10/2016

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



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

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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 Limits	% Rec Limits	RPD	RPD Limit	Notes
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Batch B6E0195 - MSVOA_LL_W (continued)

Blank (B6E0195-BLK1) - Continued

Prepared: 5/10/2016 Analyzed: 5/10/2016

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				

<i>Surrogate: 1,2-Dichloroethane-d4</i>	22.57		25.0000		90.3	51 - 157			
<i>Surrogate: 4-Bromofluorobenzene</i>	23.58		25.0000		94.3	61 - 123			
<i>Surrogate: Dibromofluoromethane</i>	24.56		25.0000		98.2	57 - 147			
<i>Surrogate: Toluene-d8</i>	24.58		25.0000		98.3	61 - 119			

LCS (B6E0195-BS1)

Prepared: 5/10/2016 Analyzed: 5/10/2016

1,1,1,2-Tetrachloroethane	23.1300	0.50	20.0000		116	76 - 132			
1,1,1-Trichloroethane	22.0900	0.50	20.0000		110	72 - 144			
1,1,2,2-Tetrachloroethane	20.6700	0.50	20.0000		103	70 - 120			
1,1,2-Trichloroethane	18.4500	0.50	20.0000		92.2	75 - 120			
1,1-Dichloroethane	20.4200	0.50	20.0000		102	65 - 127			
1,1-Dichloroethene	21.4200	0.50	20.0000		107	63 - 142			
1,1-Dichloropropene	23.3900	0.50	20.0000		117	78 - 137			
1,2,3-Trichloropropane	18.6000	0.50	20.0000		93.0	73 - 118			
1,2,3-Trichlorobenzene	20.4600	0.50	20.0000		102	53 - 164			
1,2,4-Trichlorobenzene	21.5200	0.50	20.0000		108	58 - 144			
1,2,4-Trimethylbenzene	23.0000	0.50	20.0000		115	75 - 140			
1,2-Dibromo-3-chloropropane	16.2300	0.50	20.0000		81.2	61 - 131			
1,2-Dibromoethane	19.0000	0.50	20.0000		95.0	74 - 125			
1,2-Dichlorobenzene	22.3000	0.50	20.0000		112	78 - 122			
1,2-Dichloroethane	17.8200	0.50	20.0000		89.1	70 - 126			
1,2-Dichloropropane	19.1700	0.50	20.0000		95.8	69 - 120			
1,3,5-Trimethylbenzene	23.9500	0.50	20.0000		120	73 - 145			
1,3-Dichlorobenzene	22.3200	0.50	20.0000		112	76 - 126			
1,3-Dichloropropane	18.2400	0.50	20.0000		91.2	76 - 117			



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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
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Batch B6E0195 - MSVOA_LL_W (continued)

LCS (B6E0195-BS1) - Continued

Prepared: 5/10/2016 Analyzed: 5/10/2016

1,4-Dichlorobenzene	22.6600	0.50	20.0000		113	77 - 120			
2,2-Dichloropropane	23.1500	0.50	20.0000		116	47 - 169			
2-Chlorotoluene	22.7200	0.50	20.0000		114	75 - 135			
4-Chlorotoluene	22.7000	0.50	20.0000		114	70 - 133			
4-Isopropyltoluene	24.3400	0.50	20.0000		122	72 - 153			
Benzene	41.9600	0.50	40.0000		105	73 - 123			
Bromobenzene	21.4700	0.50	20.0000		107	75 - 121			
Bromodichloromethane	19.5500	0.50	20.0000		97.8	73 - 124			
Bromoform	18.2800	0.50	20.0000		91.4	70 - 135			
Bromomethane	23.8000	0.50	20.0000		119	10 - 166			
Carbon tetrachloride	22.8500	0.50	20.0000		114	65 - 171			
Chlorobenzene	21.2600	0.50	20.0000		106	80 - 121			
Chloroethane	19.8500	0.50	20.0000		99.2	55 - 143			
Chloroform	18.8500	0.50	20.0000		94.2	65 - 130			
Chloromethane	20.6800	0.50	20.0000		103	21 - 141			
cis-1,2-Dichloroethene	19.7700	0.50	20.0000		98.8	64 - 126			
cis-1,3-Dichloropropene	22.6700	0.50	20.0000		113	70 - 131			
Dibromochloromethane	20.7000	0.50	20.0000		104	74 - 125			
Dibromomethane	18.0500	0.50	20.0000		90.2	74 - 116			
Dichlorodifluoromethane	19.7600	0.50	20.0000		98.8	40 - 186			
Ethylbenzene	42.7800	0.50	40.0000		107	77 - 130			
Hexachlorobutadiene	22.5800	0.50	20.0000		113	52 - 176			
Isopropylbenzene	26.1200	0.50	20.0000		131	77 - 144			
m,p-Xylene	44.7500	1.0	40.0000		112	84 - 136			
Methylene chloride	16.2400	1.0	20.0000		81.2	72 - 150			
n-Butylbenzene	23.7300	0.50	20.0000		119	73 - 154			
n-Propylbenzene	24.4000	0.50	20.0000		122	77 - 145			
Naphthalene	19.0000	0.50	20.0000		95.0	55 - 137			
o-Xylene	43.0200	0.50	40.0000		108	79 - 135			
sec-Butylbenzene	24.8700	0.50	20.0000		124	73 - 157			
Styrene	21.7100	0.50	20.0000		109	78 - 125			
tert-Butylbenzene	24.6200	0.50	20.0000		123	78 - 149			
Tetrachloroethene	22.6500	0.50	20.0000		113	74 - 136			
Toluene	43.2800	0.50	40.0000		108	78 - 124			
trans-1,2-Dichloroethene	20.4400	0.50	20.0000		102	66 - 131			
Trichloroethene	20.3500	0.50	20.0000		102	78 - 128			
Trichlorofluoromethane	20.8600	0.50	20.0000		104	60 - 170			
Vinyl chloride	20.4800	0.50	20.0000		102	55 - 148			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>21.21</i>		<i>25.0000</i>		<i>84.8</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.48</i>		<i>25.0000</i>		<i>97.9</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.04</i>		<i>25.0000</i>		<i>96.2</i>	<i>57 - 147</i>			



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

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Reported : 05/16/2016

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
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Batch B6E0195 - MSVOA_LL_W (continued)

LCS (B6E0195-BS1) - Continued

Prepared: 5/10/2016 Analyzed: 5/10/2016

Surrogate: Toluene-d8 25.54 25.0000

102 61 - 119

LCS Dup (B6E0195-BSD1)

Prepared: 5/10/2016 Analyzed: 5/10/2016

1,1,1,2-Tetrachloroethane	25.8100	0.50	20.0000	129	76 - 132	11.0	20	
1,1,1-Trichloroethane	24.2600	0.50	20.0000	121	72 - 144	9.36	20	
1,1,2,2-Tetrachloroethane	25.0500	0.50	20.0000	125	70 - 120	19.2	20	L4
1,1,2-Trichloroethane	21.9500	0.50	20.0000	110	75 - 120	17.3	20	
1,1-Dichloroethane	22.2100	0.50	20.0000	111	65 - 127	8.40	20	
1,1-Dichloroethene	23.1000	0.50	20.0000	116	63 - 142	7.55	20	
1,1-Dichloropropene	25.2100	0.50	20.0000	126	78 - 137	7.49	20	
1,2,3-Trichloropropane	22.3300	0.50	20.0000	112	73 - 118	18.2	20	
1,2,3-Trichlorobenzene	22.4200	0.50	20.0000	112	53 - 164	9.14	20	
1,2,4-Trichlorobenzene	22.5000	0.50	20.0000	112	58 - 144	4.45	20	
1,2,4-Trimethylbenzene	24.1600	0.50	20.0000	121	75 - 140	4.92	20	
1,2-Dibromo-3-chloropropane	19.4100	0.50	20.0000	97.0	61 - 131	17.8	20	
1,2-Dibromoethane	22.5600	0.50	20.0000	113	74 - 125	17.1	20	
1,2-Dichlorobenzene	23.8300	0.50	20.0000	119	78 - 122	6.63	20	
1,2-Dichloroethane	20.6900	0.50	20.0000	103	70 - 126	14.9	20	
1,2-Dichloropropane	21.2800	0.50	20.0000	106	69 - 120	10.4	20	
1,3,5-Trimethylbenzene	25.2300	0.50	20.0000	126	73 - 145	5.21	20	
1,3-Dichlorobenzene	23.8400	0.50	20.0000	119	76 - 126	6.59	20	
1,3-Dichloropropane	21.1900	0.50	20.0000	106	76 - 117	15.0	20	
1,4-Dichlorobenzene	24.2600	0.50	20.0000	121	77 - 120	6.82	20	L4
2,2-Dichloropropane	24.8500	0.50	20.0000	124	47 - 169	7.08	20	
2-Chlorotoluene	24.2400	0.50	20.0000	121	75 - 135	6.47	20	
4-Chlorotoluene	23.9500	0.50	20.0000	120	70 - 133	5.36	20	
4-Isopropyltoluene	25.2500	0.50	20.0000	126	72 - 153	3.67	20	
Benzene	46.2900	0.50	40.0000	116	73 - 123	9.81	20	
Bromobenzene	23.4100	0.50	20.0000	117	75 - 121	8.65	20	
Bromodichloromethane	22.0300	0.50	20.0000	110	73 - 124	11.9	20	
Bromoform	21.4800	0.50	20.0000	107	70 - 135	16.1	20	
Bromomethane	25.9800	0.50	20.0000	130	10 - 166	8.76	20	
Carbon tetrachloride	24.5800	0.50	20.0000	123	65 - 171	7.29	20	
Chlorobenzene	23.4200	0.50	20.0000	117	80 - 121	9.67	20	
Chloroethane	20.1100	0.50	20.0000	101	55 - 143	1.30	20	
Chloroform	20.7900	0.50	20.0000	104	65 - 130	9.79	20	
Chloromethane	21.0000	0.50	20.0000	105	21 - 141	1.54	20	
cis-1,2-Dichloroethene	21.5800	0.50	20.0000	108	64 - 126	8.75	20	
cis-1,3-Dichloropropene	26.0100	0.50	20.0000	130	70 - 131	13.7	20	
Dibromochloromethane	23.8000	0.50	20.0000	119	74 - 125	13.9	20	
Dibromomethane	20.9200	0.50	20.0000	105	74 - 116	14.7	20	
Dichlorodifluoromethane	20.6800	0.50	20.0000	103	40 - 186	4.55	20	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main, 532.30

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/16/2016

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
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Batch B6E0195 - MSVOA_LL_W (continued)

LCS Dup (B6E0195-BSD1) - Continued

Prepared: 5/10/2016 Analyzed: 5/10/2016

Ethylbenzene	46.1500	0.50	40.0000		115	77 - 130	7.58	20	
Hexachlorobutadiene	23.3500	0.50	20.0000		117	52 - 176	3.35	20	
Isopropylbenzene	27.3900	0.50	20.0000		137	77 - 144	4.75	20	
m,p-Xylene	48.4900	1.0	40.0000		121	84 - 136	8.02	20	
Methylene chloride	17.7200	1.0	20.0000		88.6	72 - 150	8.72	20	
n-Butylbenzene	24.4700	0.50	20.0000		122	73 - 154	3.07	20	
n-Propylbenzene	25.5200	0.50	20.0000		128	77 - 145	4.49	20	
Naphthalene	21.8900	0.50	20.0000		109	55 - 137	14.1	20	
o-Xylene	46.3500	0.50	40.0000		116	79 - 135	7.45	20	
sec-Butylbenzene	25.7300	0.50	20.0000		129	73 - 157	3.40	20	
Styrene	23.9500	0.50	20.0000		120	78 - 125	9.81	20	
tert-Butylbenzene	25.8200	0.50	20.0000		129	78 - 149	4.76	20	
Tetrachloroethene	24.9700	0.50	20.0000		125	74 - 136	9.74	20	
Toluene	47.1400	0.50	40.0000		118	78 - 124	8.54	20	
trans-1,2-Dichloroethene	22.2100	0.50	20.0000		111	66 - 131	8.30	20	
Trichloroethene	22.4300	0.50	20.0000		112	78 - 128	9.72	20	
Trichlorofluoromethane	21.7200	0.50	20.0000		109	60 - 170	4.04	20	
Vinyl chloride	21.8500	0.50	20.0000		109	55 - 148	6.47	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>22.42</i>		<i>25.0000</i>		<i>89.7</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.44</i>		<i>25.0000</i>		<i>97.8</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.18</i>		<i>25.0000</i>		<i>96.7</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.69</i>		<i>25.0000</i>		<i>103</i>	<i>61 - 119</i>			

Matrix Spike (B6E0195-MS1)

Source: 1601592-02RE1

Prepared: 5/11/2016 Analyzed: 5/11/2016

1,1,1,2-Tetrachloroethane	86.4400	2.0	80.0000	ND	108	76 - 132			
1,1,1-Trichloroethane	81.1600	2.0	80.0000	ND	101	72 - 144			
1,1,2,2-Tetrachloroethane	89.3200	2.0	80.0000	ND	112	70 - 120			
1,1,2-Trichloroethane	86.4000	2.0	80.0000	10.5600	94.8	75 - 120			
1,1-Dichloroethane	96.9600	2.0	80.0000	21.8400	93.9	65 - 127			
1,1-Dichloroethene	1092.68	2.0	80.0000	1124.80	-40.1	63 - 142			R
1,1-Dichloropropene	78.0000	2.0	80.0000	ND	97.5	78 - 137			
1,2,3-Trichloropropane	76.1200	2.0	80.0000	ND	95.2	73 - 118			
1,2,3-Trichlorobenzene	73.5600	2.0	80.0000	ND	92.0	53 - 164			
1,2,4-Trichlorobenzene	72.0000	2.0	80.0000	ND	90.0	58 - 144			
1,2,4-Trimethylbenzene	78.9600	2.0	80.0000	ND	98.7	75 - 140			
1,2-Dibromo-3-chloropropane	65.0800	2.0	80.0000	ND	81.4	61 - 131			
1,2-Dibromoethane	78.8400	2.0	80.0000	ND	98.6	74 - 125			
1,2-Dichlorobenzene	79.3600	2.0	80.0000	ND	99.2	78 - 122			
1,2-Dichloroethane	76.7600	2.0	80.0000	3.56000	91.5	70 - 126			
1,2-Dichloropropane	71.3200	2.0	80.0000	ND	89.2	69 - 120			
1,3,5-Trimethylbenzene	81.4400	2.0	80.0000	ND	102	73 - 145			



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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
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Batch B6E0195 - MSVOA_LL_W (continued)

Matrix Spike (B6E0195-MS1) - Continued

Source: 1601592-02RE1

Prepared: 5/11/2016 Analyzed: 5/11/2016

1,3-Dichlorobenzene	80.0800	2.0	80.0000	ND	100	76 - 126			
1,3-Dichloropropane	72.6800	2.0	80.0000	ND	90.8	76 - 117			
1,4-Dichlorobenzene	79.7600	2.0	80.0000	ND	99.7	77 - 120			
2,2-Dichloropropane	72.5200	2.0	80.0000	ND	90.6	47 - 169			
2-Chlorotoluene	79.2400	2.0	80.0000	ND	99.0	75 - 135			
4-Chlorotoluene	78.6400	2.0	80.0000	ND	98.3	77 - 130			
4-Isopropyltoluene	79.9600	2.0	80.0000	ND	100	72 - 153			
Benzene	156.920	2.0	160.000	ND	98.1	73 - 123			
Bromobenzene	78.4400	2.0	80.0000	ND	98.0	75 - 121			
Bromodichloromethane	76.4400	2.0	80.0000	ND	95.6	73 - 124			
Bromoform	74.0400	2.0	80.0000	ND	92.6	70 - 135			
Bromomethane	92.6400	2.0	80.0000	ND	116	10 - 166			
Carbon tetrachloride	83.8800	2.0	80.0000	ND	105	65 - 171			
Chlorobenzene	79.6800	2.0	80.0000	ND	99.6	80 - 121			
Chloroethane	67.6800	2.0	80.0000	ND	84.6	55 - 143			
Chloroform	77.1200	2.0	80.0000	1.76000	94.2	65 - 130			
Chloromethane	80.8800	2.0	80.0000	ND	101	21 - 141			
cis-1,2-Dichloroethene	77.2000	2.0	80.0000	1.84000	94.2	64 - 126			
cis-1,3-Dichloropropene	73.9600	2.0	80.0000	ND	92.4	70 - 131			
Dibromochloromethane	78.7200	2.0	80.0000	ND	98.4	74 - 125			
Dibromomethane	73.8800	2.0	80.0000	ND	92.4	74 - 116			
Dichlorodifluoromethane	67.5200	2.0	80.0000	ND	84.4	40 - 186			
Ethylbenzene	156.120	2.0	160.000	ND	97.6	77 - 130			
Hexachlorobutadiene	72.2400	2.0	80.0000	ND	90.3	52 - 176			
Isopropylbenzene	86.8000	2.0	80.0000	ND	108	77 - 144			
m,p-Xylene	161.880	4.0	160.000	ND	101	84 - 136			
Methylene chloride	64.1600	4.0	80.0000	ND	80.2	72 - 150			
n-Butylbenzene	76.2000	2.0	80.0000	ND	95.2	73 - 154			
n-Propylbenzene	82.1600	2.0	80.0000	ND	103	77 - 145			
Naphthalene	73.0000	2.0	80.0000	ND	91.2	55 - 137			
o-Xylene	158.440	2.0	160.000	ND	99.0	79 - 135			
sec-Butylbenzene	82.3200	2.0	80.0000	ND	103	73 - 157			
Styrene	80.3200	2.0	80.0000	ND	100	78 - 125			
tert-Butylbenzene	82.4000	2.0	80.0000	ND	103	78 - 149			
Tetrachloroethene	80.7600	2.0	80.0000	4.08000	95.8	74 - 136			
Toluene	162.880	2.0	160.000	ND	102	78 - 124			
trans-1,2-Dichloroethene	76.1200	2.0	80.0000	ND	95.2	66 - 131			
Trichloroethene	90.8000	2.0	80.0000	19.5200	89.1	78 - 128			
Trichlorofluoromethane	73.6800	2.0	80.0000	ND	92.1	60 - 170			
Vinyl chloride	72.6400	2.0	80.0000	ND	90.8	55 - 148			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.44</i>		<i>25.0000</i>		<i>93.8</i>	<i>51 - 157</i>			



Certificate of Analysis

Hargis & Associates, Inc.

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San Diego , CA 92122

Reported : 05/16/2016

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
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Batch B6E0195 - MSVOA_LL_W (continued)

Matrix Spike (B6E0195-MS1) - Continued

Source: 1601592-02RE1

Prepared: 5/11/2016 Analyzed: 5/11/2016

Surrogate: 4-Bromofluorobenzene	24.64		25.0000		98.6	61 - 123		
Surrogate: Dibromofluoromethane	25.02		25.0000		100	57 - 147		
Surrogate: Toluene-d8	25.58		25.0000		102	61 - 119		

Matrix Spike Dup (B6E0195-MSD1)

Source: 1601592-02RE1

Prepared: 5/11/2016 Analyzed: 5/11/2016

1,1,1,2-Tetrachloroethane	87.5200	2.0	80.0000	ND	109	76 - 132	1.24	20	
1,1,1-Trichloroethane	82.6400	2.0	80.0000	ND	103	72 - 144	1.81	20	
1,1,2,2-Tetrachloroethane	91.4800	2.0	80.0000	ND	114	70 - 120	2.39	20	
1,1,2-Trichloroethane	87.6400	2.0	80.0000	10.5600	96.4	75 - 120	1.42	20	
1,1-Dichloroethane	98.7200	2.0	80.0000	21.8400	96.1	65 - 127	1.80	20	
1,1-Dichloroethene	1113.08	2.0	80.0000	1124.80	-14.7	63 - 142	1.85	20	R
1,1-Dichloropropene	82.1600	2.0	80.0000	ND	103	78 - 137	5.19	20	
1,2,3-Trichloropropane	79.8000	2.0	80.0000	ND	99.8	73 - 118	4.72	20	
1,2,3-Trichlorobenzene	76.0800	2.0	80.0000	ND	95.1	53 - 164	3.37	20	
1,2,4-Trichlorobenzene	74.2800	2.0	80.0000	ND	92.8	58 - 144	3.12	20	
1,2,4-Trimethylbenzene	81.6000	2.0	80.0000	ND	102	75 - 140	3.29	20	
1,2-Dibromo-3-chloropropane	65.8800	2.0	80.0000	ND	82.4	61 - 131	1.22	20	
1,2-Dibromoethane	77.8400	2.0	80.0000	ND	97.3	74 - 125	1.28	20	
1,2-Dichlorobenzene	82.0400	2.0	80.0000	ND	103	78 - 122	3.32	20	
1,2-Dichloroethane	76.0000	2.0	80.0000	3.56000	90.6	70 - 126	0.995	20	
1,2-Dichloropropane	73.2400	2.0	80.0000	ND	91.6	69 - 120	2.66	20	
1,3,5-Trimethylbenzene	83.9200	2.0	80.0000	ND	105	73 - 145	3.00	20	
1,3-Dichlorobenzene	81.6400	2.0	80.0000	ND	102	76 - 126	1.93	20	
1,3-Dichloropropane	73.1600	2.0	80.0000	ND	91.4	76 - 117	0.658	20	
1,4-Dichlorobenzene	82.8800	2.0	80.0000	ND	104	77 - 120	3.84	20	
2,2-Dichloropropane	72.6800	2.0	80.0000	ND	90.8	47 - 169	0.220	20	
2-Chlorotoluene	82.0000	2.0	80.0000	ND	102	75 - 135	3.42	20	
4-Chlorotoluene	81.7600	2.0	80.0000	ND	102	77 - 130	3.89	20	
4-Isopropyltoluene	83.0800	2.0	80.0000	ND	104	72 - 153	3.83	20	
Benzene	159.720	2.0	160.000	ND	99.8	73 - 123	1.77	20	
Bromobenzene	81.4000	2.0	80.0000	ND	102	75 - 121	3.70	20	
Bromodichloromethane	76.5200	2.0	80.0000	ND	95.6	73 - 124	0.105	20	
Bromoform	72.4400	2.0	80.0000	ND	90.6	70 - 135	2.18	20	
Bromomethane	96.0800	2.0	80.0000	ND	120	10 - 166	3.65	20	
Carbon tetrachloride	83.6000	2.0	80.0000	ND	104	65 - 171	0.334	20	
Chlorobenzene	80.8800	2.0	80.0000	ND	101	80 - 121	1.49	20	
Chloroethane	70.6000	2.0	80.0000	ND	88.2	55 - 143	4.22	20	
Chloroform	75.4000	2.0	80.0000	1.76000	92.0	65 - 130	2.26	20	
Chloromethane	84.5200	2.0	80.0000	ND	106	21 - 141	4.40	20	
cis-1,2-Dichloroethene	78.1600	2.0	80.0000	1.84000	95.4	64 - 126	1.24	20	
cis-1,3-Dichloropropene	74.7600	2.0	80.0000	ND	93.4	70 - 131	1.08	20	
Dibromochloromethane	79.4800	2.0	80.0000	ND	99.4	74 - 125	0.961	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	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B6E0195 - MSVOA_LL_W (continued)

Matrix Spike Dup (B6E0195-MSD1) - Continued

Source: 1601592-02RE1

Prepared: 5/11/2016 Analyzed: 5/11/2016

Dibromomethane	72.8800	2.0	80.0000	ND	91.1	74 - 116	1.36	20	
Dichlorodifluoromethane	66.6800	2.0	80.0000	ND	83.4	40 - 186	1.25	20	
Ethylbenzene	158.360	2.0	160.000	ND	99.0	77 - 130	1.42	20	
Hexachlorobutadiene	74.3600	2.0	80.0000	ND	93.0	52 - 176	2.89	20	
Isopropylbenzene	91.8000	2.0	80.0000	ND	115	77 - 144	5.60	20	
m,p-Xylene	163.440	4.0	160.000	ND	102	84 - 136	0.959	20	
Methylene chloride	64.2400	4.0	80.0000	ND	80.3	72 - 150	0.125	20	
n-Butylbenzene	79.6400	2.0	80.0000	ND	99.6	73 - 154	4.41	20	
n-Propylbenzene	85.0800	2.0	80.0000	ND	106	77 - 145	3.49	20	
Naphthalene	75.6400	2.0	80.0000	ND	94.6	55 - 137	3.55	20	
o-Xylene	159.040	2.0	160.000	ND	99.4	79 - 135	0.378	20	
sec-Butylbenzene	85.8400	2.0	80.0000	ND	107	73 - 157	4.19	20	
Styrene	80.8800	2.0	80.0000	ND	101	78 - 125	0.695	20	
tert-Butylbenzene	86.3200	2.0	80.0000	ND	108	78 - 149	4.65	20	
Tetrachloroethene	82.8000	2.0	80.0000	4.08000	98.4	74 - 136	2.49	20	
Toluene	164.320	2.0	160.000	ND	103	78 - 124	0.880	20	
trans-1,2-Dichloroethene	77.4400	2.0	80.0000	ND	96.8	66 - 131	1.72	20	
Trichloroethene	93.9200	2.0	80.0000	19.5200	93.0	78 - 128	3.38	20	
Trichlorofluoromethane	68.9600	2.0	80.0000	ND	86.2	60 - 170	6.62	20	
Vinyl chloride	74.1600	2.0	80.0000	ND	92.7	55 - 148	2.07	20	
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Surrogate: 1,2-Dichloroethane-d4	22.51		25.0000		90.0	51 - 157			
Surrogate: 4-Bromofluorobenzene	23.77		25.0000		95.1	61 - 123			
Surrogate: Dibromofluoromethane	24.18		25.0000		96.7	57 - 147			
Surrogate: Toluene-d8	24.90		25.0000		99.6	61 - 119			



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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	RPD Limit	Notes
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Batch B6E0248 - MSVOA_LL_W

Blank (B6E0248-BLK1)

Prepared: 5/11/2016 Analyzed: 5/11/2016

Surrogate: 1,2-Dichloroethane-d4	24.78		25.0000		99.1	51 - 157			
Surrogate: 4-Bromofluorobenzene	26.02		25.0000		104	61 - 123			
Surrogate: Dibromofluoromethane	26.12		25.0000		104	57 - 147			
Surrogate: Toluene-d8	25.65		25.0000		103	61 - 119			

Blank (B6E0248-BLK2)

Prepared: 5/11/2016 Analyzed: 5/11/2016

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				



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 : 05/16/2016

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
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Batch B6E0248 - MSVOA_LL_W (continued)

Blank (B6E0248-BLK2) - Continued

Prepared: 5/11/2016 Analyzed: 5/11/2016

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				

<i>Surrogate: 1,2-Dichloroethane-d4</i>	21.37		25.0000		85.5	51 - 157			
<i>Surrogate: 4-Bromofluorobenzene</i>	23.60		25.0000		94.4	61 - 123			
<i>Surrogate: Dibromofluoromethane</i>	24.15		25.0000		96.6	57 - 147			
<i>Surrogate: Toluene-d8</i>	24.31		25.0000		97.2	61 - 119			

LCS (B6E0248-BS1)

Prepared: 5/11/2016 Analyzed: 5/11/2016

<i>Surrogate: 1,2-Dichloroethane-d4</i>	23.60		25.0000		94.4	51 - 157			
<i>Surrogate: 4-Bromofluorobenzene</i>	26.91		25.0000		108	61 - 123			
<i>Surrogate: Dibromofluoromethane</i>	24.88		25.0000		99.5	57 - 147			
<i>Surrogate: Toluene-d8</i>	26.44		25.0000		106	61 - 119			

LCS (B6E0248-BS2)

Prepared: 5/11/2016 Analyzed: 5/11/2016

Trichloroethene	22.1600	0.50	20.0000		111	78 - 128			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	20.97		25.0000		83.9	51 - 157			
<i>Surrogate: 4-Bromofluorobenzene</i>	24.62		25.0000		98.5	61 - 123			
<i>Surrogate: Dibromofluoromethane</i>	23.06		25.0000		92.2	57 - 147			
<i>Surrogate: Toluene-d8</i>	24.99		25.0000		100	61 - 119			

LCS Dup (B6E0248-BSD1)

Prepared: 5/11/2016 Analyzed: 5/11/2016



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 : 05/16/2016

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
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Batch B6E0248 - MSVOA_LL_W (continued)

LCS Dup (B6E0248-BSD1) - Continued

Prepared: 5/11/2016 Analyzed: 5/11/2016

Surrogate: 1,2-Dichloroethane-d4	24.10		25.0000		96.4	51 - 157
Surrogate: 4-Bromofluorobenzene	26.40		25.0000		106	61 - 123
Surrogate: Dibromofluoromethane	24.42		25.0000		97.7	57 - 147
Surrogate: Toluene-d8	25.93		25.0000		104	61 - 119

LCS Dup (B6E0248-BSD2)

Prepared: 5/11/2016 Analyzed: 5/11/2016

Trichloroethene	22.4100	0.50	20.0000		112	78 - 128	1.12	20
Surrogate: 1,2-Dichloroethane-d4	23.75		25.0000		95.0	51 - 157		
Surrogate: 4-Bromofluorobenzene	27.26		25.0000		109	61 - 123		
Surrogate: Dibromofluoromethane	24.67		25.0000		98.7	57 - 147		
Surrogate: Toluene-d8	26.41		25.0000		106	61 - 119		



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 : 05/16/2016

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

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B6E0141 - MSSEMI_W

Blank (B6E0141-BLK1)

Prepared: 5/6/2016 Analyzed: 5/6/2016

1,4-Dioxane	ND	2.0			NR				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	67.58		100.000		67.6	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	79.90		100.000		79.9	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	101.4		100.000		101	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	63.00		100.000		63.0	43 - 116			

LCS (B6E0141-BS1)

Prepared: 5/6/2016 Analyzed: 5/6/2016

1,4-Dioxane	94.7400	2.0	100.000		94.7	62 - 127			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	60.28		100.000		60.3	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	71.39		100.000		71.4	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	84.57		100.000		84.6	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	57.61		100.000		57.6	43 - 116			

Matrix Spike (B6E0141-MS1)

Source: 1601592-02

Prepared: 5/6/2016 Analyzed: 5/6/2016

1,4-Dioxane	259.650	2.0	100.000	215.200	44.4	62 - 127			M1
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	64.37		100.000		64.4	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	78.26		100.000		78.3	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	87.45		100.000		87.4	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	61.65		100.000		61.6	43 - 116			

Matrix Spike Dup (B6E0141-MSD1)

Source: 1601592-02

Prepared: 5/6/2016 Analyzed: 5/6/2016

1,4-Dioxane	294.790	2.0	100.000	215.200	79.6	62 - 127	12.7	20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	63.86		100.000		63.9	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	73.37		100.000		73.4	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	91.31		100.000		91.3	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	60.33		100.000		60.3	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 : 05/16/2016

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	RPD Limit	Notes
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Batch B6E0109 - MSSEMI_W

Blank (B6E0109-BLK1)

Prepared: 5/5/2016 Analyzed: 5/6/2016

1,4-Dioxane	ND	0.20			NR				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.7888		1.00000		78.9	31 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.8469		1.00000		84.7	28 - 122			
<i>Surrogate: 4-Terphenyl-d14</i>	0.9216		1.00000		92.2	43 - 131			
<i>Surrogate: Nitrobenzene-d5</i>	0.5887		1.00000		58.9	20 - 119			

LCS (B6E0109-BS1)

Prepared: 5/5/2016 Analyzed: 5/6/2016

1,4-Dioxane	1.20889	0.20	1.00000		121	49 - 169			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.7762		1.00000		77.6	31 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.8505		1.00000		85.0	28 - 122			
<i>Surrogate: 4-Terphenyl-d14</i>	0.8841		1.00000		88.4	43 - 131			
<i>Surrogate: Nitrobenzene-d5</i>	0.5952		1.00000		59.5	20 - 119			

LCS Dup (B6E0109-BSD1)

Prepared: 5/5/2016 Analyzed: 5/6/2016

1,4-Dioxane	1.34547	0.20	1.00000		135	49 - 169	10.7	20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.7522		1.00000		75.2	31 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.8290		1.00000		82.9	28 - 122			
<i>Surrogate: 4-Terphenyl-d14</i>	0.9349		1.00000		93.5	43 - 131			
<i>Surrogate: Nitrobenzene-d5</i>	0.5506		1.00000		55.1	20 - 119			



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 : 05/16/2016

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
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: Raytheon Main

TASK NO.: 532.30

Project Manager Steve Netto

QA Manager Erin Hunter

Phone 858.455.6500

Fax 858.455.6533

Sampled By:
Arielle Fender + ERIN HUNTER

SAMPLE COLLECTION

LAB ID	SAMPLE ID	Date	Time	Groundwater	Lab prepared water	Hydrochloric Acid (HCl)	Ice	40-ml VOA	1 L Amber	VOCs by EPA 524-2	1,4 Dioxane 8270 SIM	1,4-Dioxane 8270 MOD	0-10	10-100	100-1,000	>1,000	24 hr TAT	48 hr TAT	Standard TAT	Level IV Data Validation Requested	MS/MSD Requested	
1G01592 -1	TB-050210	5/2/10	1110	X	X		X	2		X			X									
-2	MW-21		1125	X	X		X	9		X			X			X						
-3	EW-01		1151	X	X		X	3	3	X		X	X									
-4	MW-35C	5/3/10	0950	X	X		X	3	1	X		X	X									
-5	MW-36-1SV		1050	X	X		X	3	1	X	X		X									
-6	MW-36		1150	X	X		X	3	1	X	X		X									
-7	MW-3600		1200	X	X		X	3	1	X	X		X									
-8	MW-39		1305	X	X		X	3	1	X	X		X									
-9	MW-33-1SV		1405	X	X		X	3	1	X	X		X									

Laboratory

REMARKS

Total number of containers per analysis: 32 10

Total No. of Containers: 642

Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<u>[Signature]</u> HAA	5/4/10 1200	<u>[Signature]</u>	5/4/10 1200
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<u>[Signature]</u>	5/4/10 1248	<u>[Signature]</u> / AT	5/4/10 1248

- No. of containers correct
- Received in good condition
- Custody seals secure
- Conforms to COC document

Send Results to:
Steve Netto
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122
Ph: 858.455.5400
snetto@hargis.com

Instructions

1. Fill out form completely and sign only after verified for completeness

2. Complete in ballpoint pen. Draw one line through error, initial and date correction

3. Indicate the number of sample containers in analytical 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.

1, 2, 1, 4, 3, C Temperature on receipt

PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Steve Netto
QA Manager Erin Hunter
Phone 858.455.6500
Fax 858.455.6533

Sampled By:				SAMPLE COLLECTION														REMARKS										
<u>Arielle Ferber + Erin Hunter</u>				LAB ID	SAMPLE ID	Date	Time	Groundwater	Lab prepared water	Hydrochloric Acid (HCl)		Ice	40-ml VOA	1 L Amber	VOCs by EPA 524-2-82100B	1,4-Dioxane 8270 SIM	1,4-Dioxane 8270 MOD		Expected Concentration Range (ppb) for VOA's				SPECIAL HANDLING					
																		10-10	10-100	100-1,000	>1,000	24 hr TAT	48 hr TAT	Standard TAT	Level IV Data Validation Requested	MS/MSD Requested		
	7601592 - 10	MW-33	5/3/16	1500	X	X			X	X		3			X				X					X				
	-11	MW-37		1610	X	X			X	X		3			X	X			X				X					
	-12	MW-32B-1GV	5/4/16	0840	X	X			X	X		3			X	X			X				X					
	-13	MW-32B		0935	X	X			X	X		3			X	X			X				X					

Total number of containers per analysis:				12	4		
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time				
<u>Erin Hunter / H+A</u>	<u>5/4/16 12:00</u>	<u>[Signature]</u>	<u>5/4/16 12:00</u>				
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time				
<u>[Signature]</u>	<u>5/4/16 12:45</u>	<u>FRD-WA / AT</u>	<u>5/4/16 12:45</u>				

Total No. of Containers: 16

- No. of containers correct
- Received in good condition
- Custody seals secure
- Conforms to COC document

Send Results to:
Steve Netto
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122
Ph: 858.455.5400
snetto@hargis.com

Instructions
Fill out form completely and sign only after verified for completeness
Complete in ballpoint pen. Draw one line through error, initial and date correction
Indicate the number of sample containers in analytical request space; indicate choice with ✓ or ✗
Note applicable preservatives, special instructions, and deviations from typical environmental samples.
Consult project QA documents for specific instructions.

1,2,1,4,3, C Temperature on receipt



PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Steve Netto
QA Manager Erin Hunter
Phone 858.455.6500
Fax 858.455.6533

Sampled By:		SAMPLE COLLECTION	
LAB ID	SAMPLE ID	Date	Time
T. Evans, K. Fong			
1601592-14	MW-28	5/3/16	8:42
-15	MW-34B		9:25
-16	MW-34DOB		9:30
-17	MW-38		10:30
-18	MW-41		11:07
-19	MW-26C		13:16
-20	MW-30A		14:03
-21	MW-30B		14:40

MATRIX	PRESERVATION	CONTAINERS	ANALYSIS REQUESTED	Expected Concentration Range (ppb) for VOA's	SPECIAL HANDLING
Groundwater	Lab prepared water Hydrochloric Acid (HCl)	Ice 40-ml VOA 1 L Amber	VOCs by EPA-824.2-8240B 1,4 Dioxane 8270 SIM 1,4-Dioxane 8270 MOD	0-10 10-100 100-1,000 >1,000	24 hr TAT 48 hr TAT Standard TAT Level IV Data Validation Requested MS/MSD Requested
X	X	X	X	X	X
X	X	X	X	X	X
X	X	X	X	X	X
X	X	X	X	X	X
X	X	X	X	X	X
X	X	X	X	X	X
X	X	X	X	X	X
X	X	X	X	X	X
X	X	X	X	X	X
X	X	X	X	X	X
X	X	X	X	X	X
X	X	X	X	X	X
X	X	X	X	X	X

Laboratory
ATL

REMARKS

Total number of containers per analysis:		24	8
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<u>EJA / HHA</u>	<u>5/4/16 12:00</u>	<u>ATL</u>	<u>5/4/16 12:00</u>
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<u>Proff</u>	<u>5/4/16 12:45</u>	<u>FPOWA / ATL</u>	<u>5/4/16 12:45</u>

- No. of containers correct
- Received in good condition
- Custody seals secure
- Conforms to COC document

Send Results to:
Steve Netto
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122
Ph: 858.455.5400
snetto@hargis.com

Instructions
Fill out form completely and sign only after verified for completeness
complete in ballpoint pen. Draw one line through error, initial and date correction
indicate the number of sample containers in analytical request space; indicate choice with ✓ or ✗
note applicable preservatives, special instructions, and deviations from typical environmental samples.
consult project QA documents for specific instructions.

1, 2, 1, 4, 3, 5 Temperature on receipt

PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Steve Netto

QA Manager Erin Hunter

Phone 858.455.6500

Fax 858.455.6533

Sampled By:		SAMPLE COLLECTION	
T. Evans K. Fong		Date	Time
LAB ID	SAMPLE ID	Date	Time
1601592-22	MW-08	5/3/16	1510
	↓	↓	↓
-23	MW-40	5/4/16	852
	↓	↓	↓
-24	MW-31	↓	955
	↓	↓	↓

MATRIX	PRESERVATION	CONTAINERS	ANALYSIS REQUESTED	Expected Concentration Range (ppb) for VOA's	SPECIAL HANDLING
Groundwater	Lab prepared water Hydrochloric Acid (HCl)	Ice 40-ml VOA 1 L Amber	VOCs by EPA-8242-B260B 1,4 Dioxane 8270 SIM 1,4-Dioxane 8270 MOD	0-10 10-100 100-1,000 >1,000	24 hr TAT 48 hr TAT Standard TAT Level IV Data Validation Requested MS/MSD Requested
X	X	X 3	X	X	X
X	X	X 1	X X	X	X X
X	X	X 3	X X	X	X X
X	X	X 1	X X	X	X X
X	X	X 3	X	X	X X
X	X	X 1	X		X X

Laboratory	REMARKS
ATL	

Total number of containers per analysis:		9	3	Total No. of Containers: 12
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time	
<u>[Signature]</u> HFA	5/4/16 (200)	<u>[Signature]</u>	5/4/16 1200	
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time	
<u>[Signature]</u>	5/4/16 1245	<u>[Signature]</u> FROWN / ATL	5/4/16 1245	

- No. of containers correct
- Received in good condition
- Custody seals secure
- Conforms to COC document

Send Results to:
Steve Netto
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122
Ph: 858.455.5400
snetto@hargis.com

Instructions: 1, 2, 1, 4, 2, 6 Temperature on receipt

Fill out form completely and sign only after verified for completeness
complete in ballpoint pen. Draw one line through error, initial and date correction
indicate the number of sample containers in analytical 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.

GROUNDWATER EXTRACTION AND TREATMENT SYSTEM ANALYTICAL RESULTS

March 24, 2016

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 : 1600807

Client Reference : Raytheon Main GETS Monthly Sample, 532.15

Enclosed are the results for sample(s) received on March 03, 2016 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,



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 GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-030316	1600807-01	Lab prepared water	3/03/16 7:00	3/03/16 14:30
CEFF	1600807-02	Groundwater	3/03/16 7:45	3/03/16 14:30
CBT	1600807-03	Groundwater	3/03/16 8:05	3/03/16 14:30
POX	1600807-04	Groundwater	3/03/16 8:07	3/03/16 14:30
PF	1600807-05	Groundwater	3/03/16 8:15	3/03/16 14:30
INF	1600807-06	Groundwater	3/03/16 8:25	3/03/16 14:30
EW-02	1600807-07	Groundwater	3/03/16 8:55	3/03/16 14:30
MW-29	1600807-08	Groundwater	3/03/16 9:07	3/03/16 14:30

CASE NARRATIVE

The sample for EPA 317 (Bromate) analysis was subcontracted to Exova, Inc. with ELAP Cert.# 2652.

Sample Receiving/General Comments:

The following analytes lists were taken from sample containers: Alkalinity - Hydroxide, Bicarbonate, Carbonate, and Total.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID TB-030316

Lab ID: 1600807-01

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	B6C0142	03/07/2016	03/07/16 12:42	
1,1,1-Trichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,1,2-Trichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,1-Dichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,1-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,1-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,2,3-Trichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,2,3-Trichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,2,4-Trichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,2,4-Trimethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,2-Dibromoethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,2-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,2-Dichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,2-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,3,5-Trimethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,3-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,3-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
1,4-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
2,2-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
2-Chlorotoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
4-Chlorotoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
4-Isopropyltoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Benzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Bromobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Bromodichloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Bromoform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Bromomethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Carbon tetrachloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Chlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Chloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Chloroform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Chloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
cis-1,2-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
cis-1,3-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Dibromochloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID TB-030316

Lab ID: 1600807-01

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	B6C0142	03/07/2016	03/07/16 12:42	
Dichlorodifluoromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Ethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Hexachlorobutadiene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Isopropylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
m,p-Xylene	ND	1.0	1	B6C0142	03/07/2016	03/07/16 12:42	
Methylene chloride	ND	1.0	1	B6C0142	03/07/2016	03/07/16 12:42	
n-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
n-Propylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Naphthalene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
o-Xylene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
sec-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Styrene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
tert-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Tetrachloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Toluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
trans-1,2-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Trichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Trichlorofluoromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
Vinyl chloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:42	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>110 %</i>	<i>49 - 148</i>		B6C0142	03/07/2016	<i>03/07/16 12:42</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.2 %</i>	<i>65 - 132</i>		B6C0142	03/07/2016	<i>03/07/16 12:42</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>110 %</i>	<i>55 - 138</i>		B6C0142	03/07/2016	<i>03/07/16 12:42</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>60 - 120</i>		B6C0142	03/07/2016	<i>03/07/16 12:42</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID CEFF

Lab ID: 1600807-02

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	B6C0142	03/07/2016	03/07/16 13:04	
1,1,1-Trichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,1,2-Trichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,1-Dichloroethane	0.54	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,1-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,1-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,2,3-Trichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,2,3-Trichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,2,4-Trichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,2,4-Trimethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,2-Dibromoethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,2-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,2-Dichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,2-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,3,5-Trimethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,3-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,3-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
1,4-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
2,2-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
2-Chlorotoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
4-Chlorotoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
4-Isopropyltoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Benzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Bromobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Bromodichloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Bromoform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Bromomethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Carbon tetrachloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Chlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Chloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Chloroform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Chloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
cis-1,2-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
cis-1,3-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Dibromochloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID CEFF

Lab ID: 1600807-02

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	B6C0142	03/07/2016	03/07/16 13:04	
Dichlorodifluoromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Ethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Hexachlorobutadiene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Isopropylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
m,p-Xylene	ND	1.0	1	B6C0142	03/07/2016	03/07/16 13:04	
Methylene chloride	ND	1.0	1	B6C0142	03/07/2016	03/07/16 13:04	
n-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
n-Propylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Naphthalene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
o-Xylene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
sec-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Styrene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
tert-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Tetrachloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Toluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
trans-1,2-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Trichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Trichlorofluoromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
Vinyl chloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:04	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>109 %</i>	<i>49 - 148</i>		B6C0142	03/07/2016	<i>03/07/16 13:04</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>102 %</i>	<i>65 - 132</i>		B6C0142	03/07/2016	<i>03/07/16 13:04</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>107 %</i>	<i>55 - 138</i>		B6C0142	03/07/2016	<i>03/07/16 13:04</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>60 - 120</i>		B6C0142	03/07/2016	<i>03/07/16 13:04</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID CEFF

Lab ID: 1600807-02

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6C0172	03/07/2016	03/07/16 16:35	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	76.6 %	33 - 98		B6C0172	03/07/2016	03/07/16 16:35	
<i>Surrogate: 2-Fluorobiphenyl</i>	84.7 %	35 - 110		B6C0172	03/07/2016	03/07/16 16:35	
<i>Surrogate: 4-Terphenyl-d14</i>	90.7 %	37 - 158		B6C0172	03/07/2016	03/07/16 16:35	
<i>Surrogate: Nitrobenzene-d5</i>	80.1 %	21 - 121		B6C0172	03/07/2016	03/07/16 16:35	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID CBT

Lab ID: 1600807-03

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	B6C0142	03/07/2016	03/07/16 13:26	
1,1,1-Trichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,1,2-Trichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,1-Dichloroethane	0.53	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,1-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,1-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,2,3-Trichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,2,3-Trichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,2,4-Trichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,2,4-Trimethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,2-Dibromoethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,2-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,2-Dichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,2-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,3,5-Trimethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,3-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,3-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
1,4-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
2,2-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
2-Chlorotoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
4-Chlorotoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
4-Isopropyltoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Benzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Bromobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Bromodichloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Bromoform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Bromomethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Carbon tetrachloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Chlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Chloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Chloroform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Chloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
cis-1,2-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
cis-1,3-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Dibromochloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID CBT

Lab ID: 1600807-03

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	B6C0142	03/07/2016	03/07/16 13:26	
Dichlorodifluoromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Ethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Hexachlorobutadiene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Isopropylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
m,p-Xylene	ND	1.0	1	B6C0142	03/07/2016	03/07/16 13:26	
Methylene chloride	ND	1.0	1	B6C0142	03/07/2016	03/07/16 13:26	
n-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
n-Propylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Naphthalene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
o-Xylene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
sec-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Styrene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
tert-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Tetrachloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Toluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
trans-1,2-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Trichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Trichlorofluoromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
Vinyl chloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>110 %</i>	<i>49 - 148</i>		B6C0142	03/07/2016	<i>03/07/16 13:26</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>103 %</i>	<i>65 - 132</i>		B6C0142	03/07/2016	<i>03/07/16 13:26</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>	<i>55 - 138</i>		B6C0142	03/07/2016	<i>03/07/16 13:26</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>60 - 120</i>		B6C0142	03/07/2016	<i>03/07/16 13:26</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID POX

Lab ID: 1600807-04

Alkalinity, Speciated by SM 2320B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO ₃)	200	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	
Alkalinity, Total (as CaCO ₃)	200	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	

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	ND	3.0	1	B6C0229	03/08/2016	03/08/16 11:10	

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	B6C0142	03/07/2016	03/07/16 13:48	
1,1,1-Trichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,1,2-Trichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,1-Dichloroethane	0.51	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,1-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,1-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,2,3-Trichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,2,3-Trichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,2,4-Trichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,2,4-Trimethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,2-Dibromoethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,2-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,2-Dichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,2-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,3,5-Trimethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,3-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,3-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
1,4-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
2,2-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
2-Chlorotoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID POX

Lab ID: 1600807-04

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
4-Isopropyltoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Benzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Bromobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Bromodichloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Bromoform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Bromomethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Carbon tetrachloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Chlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Chloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Chloroform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Chloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
cis-1,2-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
cis-1,3-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Dibromochloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Dibromomethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Dichlorodifluoromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Ethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Hexachlorobutadiene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Isopropylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
m,p-Xylene	ND	1.0	1	B6C0142	03/07/2016	03/07/16 13:48	
Methylene chloride	ND	1.0	1	B6C0142	03/07/2016	03/07/16 13:48	
n-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
n-Propylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Naphthalene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
o-Xylene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
sec-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Styrene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
tert-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Tetrachloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Toluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
trans-1,2-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Trichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Trichlorofluoromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Vinyl chloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 13:48	
Surrogate: 1,2-Dichloroethane-d4	93.9 %	49 - 148		B6C0142	03/07/2016	03/07/16 13:48	
Surrogate: 4-Bromofluorobenzene	84.6 %	65 - 132		B6C0142	03/07/2016	03/07/16 13:48	



Certificate of Analysis

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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID POX

Lab ID: 1600807-04

Volatile Organic Compounds by EPA 8260B

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: Dibromofluoromethane	93.1 %	55 - 138		B6C0142	03/07/2016	03/07/16 13:48	
Surrogate: Toluene-d8	85.7 %	60 - 120		B6C0142	03/07/2016	03/07/16 13:48	

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6C0172	03/07/2016	03/07/16 17:02	
Surrogate: 1,2-Dichlorobenzene-d4	80.8 %	33 - 98		B6C0172	03/07/2016	03/07/16 17:02	
Surrogate: 2-Fluorobiphenyl	88.3 %	35 - 110		B6C0172	03/07/2016	03/07/16 17:02	
Surrogate: 4-Terphenyl-d14	90.0 %	37 - 158		B6C0172	03/07/2016	03/07/16 17:02	
Surrogate: Nitrobenzene-d5	85.6 %	21 - 121		B6C0172	03/07/2016	03/07/16 17:02	



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Client Sample ID PF

Lab ID: 1600807-05

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	B6C0174	03/04/2016	03/04/16 09:59	

Alkalinity, Speciated by SM 2320B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO₃)	200	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	
Alkalinity, Total (as CaCO₃)	200	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	ND	1.0	1	B6C0202	03/07/2016	03/07/16 15:30	

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	ND	3.0	1	B6C0229	03/08/2016	03/08/16 11:29	



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Project Number : Raytheon Main GETS Monthly Sample, 5

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 03/24/2016

Client Sample ID INF

Lab ID: 1600807-06

Bromide by Ion Chromatography EPA 300

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.22	0.05	1	B6C0233	03/04/2016	03/04/16 16:58	

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	B6C0142	03/07/2016	03/07/16 14:32	
1,1,1-Trichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,1,2-Trichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,1-Dichloroethane	0.90	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,1-Dichloroethene	81	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,1-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,2,3-Trichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,2,3-Trichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,2,4-Trichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,2,4-Trimethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,2-Dibromoethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,2-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,2-Dichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,2-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,3,5-Trimethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,3-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,3-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
1,4-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
2,2-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
2-Chlorotoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
4-Chlorotoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
4-Isopropyltoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Benzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Bromobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Bromodichloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Bromoform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Bromomethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Carbon tetrachloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Chlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID INF

Lab ID: 1600807-06

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	B6C0142	03/07/2016	03/07/16 14:32	
Chloroform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Chloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
cis-1,2-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
cis-1,3-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Dibromochloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Dibromomethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Dichlorodifluoromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Ethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Hexachlorobutadiene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Isopropylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
m,p-Xylene	ND	1.0	1	B6C0142	03/07/2016	03/07/16 14:32	
Methylene chloride	ND	1.0	1	B6C0142	03/07/2016	03/07/16 14:32	
n-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
n-Propylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Naphthalene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
o-Xylene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
sec-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Styrene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
tert-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Tetrachloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Toluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
trans-1,2-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Trichloroethene	0.70	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Trichlorofluoromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
Vinyl chloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:32	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>112 %</i>	<i>49 - 148</i>		B6C0142	03/07/2016	<i>03/07/16 14:32</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>103 %</i>	<i>65 - 132</i>		B6C0142	03/07/2016	<i>03/07/16 14:32</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>111 %</i>	<i>55 - 138</i>		B6C0142	03/07/2016	<i>03/07/16 14:32</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>60 - 120</i>		B6C0142	03/07/2016	<i>03/07/16 14:32</i>	



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID INF

Lab ID: 1600807-06

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	27	2.0	1	B6C0173	03/07/2016	03/08/16 18:10	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>62.0 %</i>	<i>42 - 106</i>		<i>B6C0173</i>	<i>03/07/2016</i>	<i>03/08/16 18:10</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>78.5 %</i>	<i>55 - 117</i>		<i>B6C0173</i>	<i>03/07/2016</i>	<i>03/08/16 18:10</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>99.6 %</i>	<i>52 - 142</i>		<i>B6C0173</i>	<i>03/07/2016</i>	<i>03/08/16 18:10</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>89.3 %</i>	<i>43 - 116</i>		<i>B6C0173</i>	<i>03/07/2016</i>	<i>03/08/16 18:10</i>	



Certificate of Analysis

Hargis & Associates, Inc.

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San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID EW-02

Lab ID: 1600807-07

Bromide by Ion Chromatography EPA 300

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.23	0.05	1	B6C0233	03/04/2016	03/04/16 17:09	

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	B6C0142	03/07/2016	03/07/16 14:10	
1,1,1-Trichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,1,2-Trichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,1-Dichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,1-Dichloroethene	34	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,1-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,2,3-Trichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,2,3-Trichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,2,4-Trichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,2,4-Trimethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,2-Dibromoethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,2-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,2-Dichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,2-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,3,5-Trimethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,3-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,3-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
1,4-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
2,2-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
2-Chlorotoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
4-Chlorotoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
4-Isopropyltoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Benzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Bromobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Bromodichloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Bromoform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Bromomethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Carbon tetrachloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Chlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID EW-02

Lab ID: 1600807-07

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	B6C0142	03/07/2016	03/07/16 14:10	
Chloroform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Chloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
cis-1,2-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
cis-1,3-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Dibromochloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Dibromomethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Dichlorodifluoromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Ethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Hexachlorobutadiene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Isopropylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
m,p-Xylene	ND	1.0	1	B6C0142	03/07/2016	03/07/16 14:10	
Methylene chloride	ND	1.0	1	B6C0142	03/07/2016	03/07/16 14:10	
n-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
n-Propylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Naphthalene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
o-Xylene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
sec-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Styrene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
tert-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Tetrachloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Toluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
trans-1,2-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Trichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Trichlorofluoromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
Vinyl chloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 14:10	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>108 %</i>	<i>49 - 148</i>		B6C0142	03/07/2016	<i>03/07/16 14:10</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>100 %</i>	<i>65 - 132</i>		B6C0142	03/07/2016	<i>03/07/16 14:10</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>	<i>55 - 138</i>		B6C0142	03/07/2016	<i>03/07/16 14:10</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.7 %</i>	<i>60 - 120</i>		B6C0142	03/07/2016	<i>03/07/16 14:10</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID EW-02

Lab ID: 1600807-07

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	11	2.0	1	B6C0173	03/07/2016	03/08/16 18:37	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	63.2 %	42 - 106		B6C0173	03/07/2016	03/08/16 18:37	
<i>Surrogate: 2-Fluorobiphenyl</i>	82.8 %	55 - 117		B6C0173	03/07/2016	03/08/16 18:37	
<i>Surrogate: 4-Terphenyl-d14</i>	104 %	52 - 142		B6C0173	03/07/2016	03/08/16 18:37	
<i>Surrogate: Nitrobenzene-d5</i>	93.3 %	43 - 116		B6C0173	03/07/2016	03/08/16 18:37	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID MW-29

Lab ID: 1600807-08

Bromide by Ion Chromatography EPA 300

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.46	0.05	1	B6C0233	03/04/2016	03/04/16 17:21	

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	B6C0142	03/07/2016	03/07/16 15:16	
1,1,1-Trichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,1,2-Trichloroethane	0.97	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,1-Dichloroethane	3.0	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,1-Dichloroethene	330	5.0	10	B6C0142	03/07/2016	03/07/16 15:38	
1,1-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,2,3-Trichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,2,3-Trichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,2,4-Trichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,2,4-Trimethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,2-Dibromoethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,2-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,2-Dichloroethane	0.65	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,2-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,3,5-Trimethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,3-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,3-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
1,4-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
2,2-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
2-Chlorotoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
4-Chlorotoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
4-Isopropyltoluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Benzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Bromobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Bromodichloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Bromoform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Bromomethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Carbon tetrachloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Chlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID MW-29

Lab ID: 1600807-08

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	B6C0142	03/07/2016	03/07/16 15:16	
Chloroform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Chloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
cis-1,2-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
cis-1,3-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Dibromochloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Dibromomethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Dichlorodifluoromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Ethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Hexachlorobutadiene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Isopropylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
m,p-Xylene	ND	1.0	1	B6C0142	03/07/2016	03/07/16 15:16	
Methylene chloride	ND	1.0	1	B6C0142	03/07/2016	03/07/16 15:16	
n-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
n-Propylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Naphthalene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
o-Xylene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
sec-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Styrene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
tert-Butylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Tetrachloroethene	0.87	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Toluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
trans-1,2-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Trichloroethene	2.9	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Trichlorofluoromethane	1.1	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
Vinyl chloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 15:16	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>111 %</i>	<i>49 - 148</i>		B6C0142	03/07/2016	<i>03/07/16 15:38</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>112 %</i>	<i>49 - 148</i>		B6C0142	03/07/2016	<i>03/07/16 15:16</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>101 %</i>	<i>65 - 132</i>		B6C0142	03/07/2016	<i>03/07/16 15:38</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>102 %</i>	<i>65 - 132</i>		B6C0142	03/07/2016	<i>03/07/16 15:16</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>107 %</i>	<i>55 - 138</i>		B6C0142	03/07/2016	<i>03/07/16 15:16</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>111 %</i>	<i>55 - 138</i>		B6C0142	03/07/2016	<i>03/07/16 15:38</i>	
<i>Surrogate: Toluene-d8</i>	<i>97.9 %</i>	<i>60 - 120</i>		B6C0142	03/07/2016	<i>03/07/16 15:16</i>	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>60 - 120</i>		B6C0142	03/07/2016	<i>03/07/16 15:38</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID MW-29

Lab ID: 1600807-08

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	120	2.0	1	B6C0173	03/07/2016	03/08/16 19:04	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	64.9 %	42 - 106		B6C0173	03/07/2016	03/08/16 19:04	
<i>Surrogate: 2-Fluorobiphenyl</i>	81.4 %	55 - 117		B6C0173	03/07/2016	03/08/16 19:04	
<i>Surrogate: 4-Terphenyl-d14</i>	96.6 %	52 - 142		B6C0173	03/07/2016	03/08/16 19:04	
<i>Surrogate: Nitrobenzene-d5</i>	93.0 %	43 - 116		B6C0173	03/07/2016	03/08/16 19:04	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

QUALITY CONTROL SECTION

Alkalinity, Speciated by SM 2320B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B6C0303 - No_Prep_WC1_W

Blank (B6C0303-BLK1)

Prepared: 3/10/2016 Analyzed: 3/10/2016

Alkalinity, Bicarbonate (as CaCO3)	ND	5.0			NR			
Alkalinity, Carbonate (as CaCO3)	ND	5.0			NR			
Alkalinity, Hydroxide (as CaCO3)	ND	5.0			NR			
Alkalinity, Total (as CaCO3)	ND	5.0			NR			

LCS (B6C0303-BS1)

Prepared: 3/10/2016 Analyzed: 3/10/2016

Alkalinity, Total (as CaCO3)	90.2300	5.0	99.9580		90.3	80 - 120		
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Duplicate (B6C0303-DUP1)

Source: 1600807-04

Prepared: 3/10/2016 Analyzed: 3/10/2016

Alkalinity, Total (as CaCO3)	201.130	5.0		202.070	NR		0.466	20
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Matrix Spike (B6C0303-MS1)

Source: 1600807-04

Prepared: 3/10/2016 Analyzed: 3/10/2016

Alkalinity, Total (as CaCO3)	289.470	5.0	99.9580	202.070	87.4	80 - 120		
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Matrix Spike Dup (B6C0303-MSD1)

Source: 1600807-04

Prepared: 3/10/2016 Analyzed: 3/10/2016

Alkalinity, Total (as CaCO3)	290.410	5.0	99.9580	202.070	88.4	80 - 120	0.324	20
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Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

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
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Batch B6C0202 - No_Prep_WC1_W

Blank (B6C0202-BLK1)

Prepared: 3/7/2016 Analyzed: 3/7/2016

Residue, Suspended

ND

1.0

NR

LCS (B6C0202-BS1)

Prepared: 3/7/2016 Analyzed: 3/7/2016

Residue, Suspended

92.0000

10

92.1000

99.9

80 - 120

Duplicate (B6C0202-DUP1)

Source: 1600799-01

Prepared: 3/7/2016 Analyzed: 3/7/2016

Residue, Suspended

96.0000

10

94.0000

NR

2.11

10



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

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
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Batch B6C0233 - No_Prep_IC1_W

Blank (B6C0233-BLK1)

Prepared: 3/4/2016 Analyzed: 3/4/2016

Bromide ND 0.05 NR

LCS (B6C0233-BS1)

Prepared: 3/4/2016 Analyzed: 3/4/2016

Bromide 0.985800 0.05 1.00000 98.6 90 - 110

Duplicate (B6C0233-DUP1)

Source: 1600809-02

Prepared: 3/4/2016 Analyzed: 3/4/2016

Bromide ND 1.0 0.245200 NR 20

Matrix Spike (B6C0233-MS1)

Source: 1600809-02

Prepared: 3/4/2016 Analyzed: 3/4/2016

Bromide 2.99110 2.50000 ND 119 80 - 120

Matrix Spike Dup (B6C0233-MSD1)

Source: 1600809-02

Prepared: 3/4/2016 Analyzed: 3/4/2016

Bromide 2.99290 2.50000 ND 119 80 - 120 0.0602 20



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

Project Number : Raytheon Main GETS Monthly Sample, 5
 Report To : Steve Netto
 Reported : 03/24/2016

UV Absorption by EPA 415.3 - Quality Control

Analyte	Result (1/cm)	PQL (1/cm)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B6C0174 - No_Prep_II_W

Blank (B6C0174-BLK1)									
UV Absorption	ND	0.01							
Duplicate (B6C0174-DUP1)		Source: 1600807-05							
UV Absorption	ND	0.01		ND	NR			20	
Duplicate (B6C0174-DUP2)		Source: 1600809-02							
UV Absorption	ND	0.01		ND	NR			20	
Duplicate (B6C0174-DUP3)		Source: 1600809-03							
UV Absorption	ND	0.01		ND	NR			20	
Duplicate (B6C0174-DUP4)		Source: 1600809-04							
UV Absorption	ND	0.01		ND	NR			20	
Duplicate (B6C0174-DUP5)		Source: 1600809-05							
UV Absorption	ND	0.01		ND	NR			20	



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

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
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Batch B6C0229 - No_Prep_II_W

Blank (B6C0229-BLK1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

Organic Carbon, Total

ND

3.0

NR

LCS (B6C0229-BS1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

Organic Carbon, Total

18.8000

3.0

20.0000

94.0

80 - 120

LCS Dup (B6C0229-BSD1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

Organic Carbon, Total

16.4400

3.0

20.0000

82.2

80 - 120

13.4

20



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	Limits Limits	RPD RPD	RPD Limit	Notes
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Batch B6C0142 - MSVOA_LL_W

Blank (B6C0142-BLK1)

Prepared: 3/7/2016 Analyzed: 3/7/2016

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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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

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
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Batch B6C0142 - MSVOA_LL_W (continued)

Blank (B6C0142-BLK1) - Continued

Prepared: 3/7/2016 Analyzed: 3/7/2016

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				
<hr/>									
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>25.05</i>		<i>25.0000</i>		<i>100</i>	<i>49 - 148</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.64</i>		<i>25.0000</i>		<i>98.6</i>	<i>65 - 132</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>25.85</i>		<i>25.0000</i>		<i>103</i>	<i>55 - 138</i>			
<i>Surrogate: Toluene-d8</i>	<i>24.49</i>		<i>25.0000</i>		<i>98.0</i>	<i>60 - 120</i>			

LCS (B6C0142-BS1)

Prepared: 3/7/2016 Analyzed: 3/7/2016

1,1,1,2-Tetrachloroethane	22.5500	0.50	20.0000		113	71 - 142			
1,1,1-Trichloroethane	24.7400	0.50	20.0000		124	68 - 141			
1,1,2,2-Tetrachloroethane	19.6900	0.50	20.0000		98.4	72 - 123			
1,1,2-Trichloroethane	20.2300	0.50	20.0000		101	63 - 129			
1,1-Dichloroethane	19.5800	0.50	20.0000		97.9	65 - 133			
1,1-Dichloroethene	24.3000	0.50	20.0000		122	61 - 136			
1,1-Dichloropropene	24.6100	0.50	20.0000		123	62 - 137			
1,2,3-Trichloropropane	20.0100	0.50	20.0000		100	71 - 128			
1,2,3-Trichlorobenzene	21.8900	0.50	20.0000		109	47 - 187			
1,2,4-Trichlorobenzene	22.2600	0.50	20.0000		111	53 - 154			
1,2,4-Trimethylbenzene	22.4900	0.50	20.0000		112	80 - 139			
1,2-Dibromo-3-chloropropane	22.7200	0.50	20.0000		114	53 - 166			
1,2-Dibromoethane	21.4600	0.50	20.0000		107	58 - 134			
1,2-Dichlorobenzene	20.9200	0.50	20.0000		105	75 - 130			
1,2-Dichloroethane	20.4900	0.50	20.0000		102	71 - 131			
1,2-Dichloropropane	20.7600	0.50	20.0000		104	69 - 130			
1,3,5-Trimethylbenzene	22.6900	0.50	20.0000		113	80 - 139			
1,3-Dichlorobenzene	21.1200	0.50	20.0000		106	76 - 129			
1,3-Dichloropropane	20.6800	0.50	20.0000		103	75 - 124			



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

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
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Batch B6C0142 - MSVOA_LL_W (continued)

LCS (B6C0142-BS1) - Continued

Prepared: 3/7/2016 Analyzed: 3/7/2016

1,4-Dichlorobenzene	20.2800	0.50	20.0000		101	76 - 123			
2,2-Dichloropropane	26.9000	0.50	20.0000		134	60 - 149			
2-Chlorotoluene	22.0700	0.50	20.0000		110	78 - 137			
4-Chlorotoluene	21.7400	0.50	20.0000		109	78 - 136			
4-Isopropyltoluene	24.1100	0.50	20.0000		121	75 - 146			
Benzene	43.7900	0.50	40.0000		109	72 - 127			
Bromobenzene	20.4500	0.50	20.0000		102	74 - 123			
Bromodichloromethane	20.9400	0.50	20.0000		105	74 - 130			
Bromoform	21.5900	0.50	20.0000		108	74 - 135			
Bromomethane	27.8200	0.50	20.0000		139	14 - 166			
Carbon tetrachloride	26.6300	0.50	20.0000		133	57 - 162			
Chlorobenzene	20.6400	0.50	20.0000		103	78 - 125			
Chloroethane	23.2400	0.50	20.0000		116	54 - 144			
Chloroform	21.2200	0.50	20.0000		106	66 - 132			
Chloromethane	20.1800	0.50	20.0000		101	31 - 128			
cis-1,2-Dichloroethene	22.1700	0.50	20.0000		111	68 - 124			
cis-1,3-Dichloropropene	23.7200	0.50	20.0000		119	63 - 139			
Dibromochloromethane	21.0100	0.50	20.0000		105	78 - 132			
Dibromomethane	20.5400	0.50	20.0000		103	76 - 122			
Dichlorodifluoromethane	29.2600	0.50	20.0000		146	17 - 171			
Ethylbenzene	44.5900	0.50	40.0000		111	71 - 142			
Hexachlorobutadiene	23.5700	0.50	20.0000		118	54 - 169			
Isopropylbenzene	25.3200	0.50	20.0000		127	76 - 146			
m,p-Xylene	46.6000	1.0	40.0000		116	75 - 150			
Methylene chloride	18.8300	1.0	20.0000		94.2	66 - 130			
n-Butylbenzene	24.8800	0.50	20.0000		124	76 - 151			
n-Propylbenzene	23.6100	0.50	20.0000		118	76 - 147			
Naphthalene	22.7600	0.50	20.0000		114	36 - 180			
o-Xylene	45.4000	0.50	40.0000		114	75 - 143			
sec-Butylbenzene	24.1300	0.50	20.0000		121	77 - 147			
Styrene	22.0700	0.50	20.0000		110	75 - 133			
tert-Butylbenzene	23.8800	0.50	20.0000		119	75 - 143			
Tetrachloroethene	22.9700	0.50	20.0000		115	58 - 139			
Toluene	43.4700	0.50	40.0000		109	59 - 140			
trans-1,2-Dichloroethene	22.3000	0.50	20.0000		112	63 - 128			
Trichloroethene	23.5500	0.50	20.0000		118	67 - 130			
Trichlorofluoromethane	27.0200	0.50	20.0000		135	56 - 168			
Vinyl chloride	24.3800	0.50	20.0000		122	49 - 146			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>26.26</i>		<i>25.0000</i>		<i>105</i>	<i>49 - 148</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>26.51</i>		<i>25.0000</i>		<i>106</i>	<i>65 - 132</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>25.88</i>		<i>25.0000</i>		<i>104</i>	<i>55 - 138</i>			



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

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
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Batch B6C0142 - MSVOA_LL_W (continued)

LCS (B6C0142-BS1) - Continued

Prepared: 3/7/2016 Analyzed: 3/7/2016

Surrogate: Toluene-d8 25.74 25.0000

103 60 - 120

LCS Dup (B6C0142-BSD1)

Prepared: 3/7/2016 Analyzed: 3/7/2016

1,1,1,2-Tetrachloroethane	20.4300	0.50	20.0000	102	71 - 142	9.87	20
1,1,1-Trichloroethane	23.1000	0.50	20.0000	116	68 - 141	6.86	20
1,1,2,2-Tetrachloroethane	19.4200	0.50	20.0000	97.1	72 - 123	1.38	20
1,1,2-Trichloroethane	19.0900	0.50	20.0000	95.4	63 - 129	5.80	20
1,1-Dichloroethane	18.3800	0.50	20.0000	91.9	65 - 133	6.32	20
1,1-Dichloroethene	22.9500	0.50	20.0000	115	61 - 136	5.71	20
1,1-Dichloropropene	23.1700	0.50	20.0000	116	62 - 137	6.03	20
1,2,3-Trichloropropane	19.3700	0.50	20.0000	96.8	71 - 128	3.25	20
1,2,3-Trichlorobenzene	20.8300	0.50	20.0000	104	47 - 187	4.96	20
1,2,4-Trichlorobenzene	20.9500	0.50	20.0000	105	53 - 154	6.06	20
1,2,4-Trimethylbenzene	21.7800	0.50	20.0000	109	80 - 139	3.21	20
1,2-Dibromo-3-chloropropane	22.0900	0.50	20.0000	110	53 - 166	2.81	20
1,2-Dibromoethane	20.0900	0.50	20.0000	100	58 - 134	6.59	20
1,2-Dichlorobenzene	20.0200	0.50	20.0000	100	75 - 130	4.40	20
1,2-Dichloroethane	19.3100	0.50	20.0000	96.6	71 - 131	5.93	20
1,2-Dichloropropane	19.4100	0.50	20.0000	97.0	69 - 130	6.72	20
1,3,5-Trimethylbenzene	22.2900	0.50	20.0000	111	80 - 139	1.78	20
1,3-Dichlorobenzene	20.1900	0.50	20.0000	101	76 - 129	4.50	20
1,3-Dichloropropane	19.7000	0.50	20.0000	98.5	75 - 124	4.85	20
1,4-Dichlorobenzene	19.8800	0.50	20.0000	99.4	76 - 123	1.99	20
2,2-Dichloropropane	23.1600	0.50	20.0000	116	60 - 149	14.9	20
2-Chlorotoluene	21.0100	0.50	20.0000	105	78 - 137	4.92	20
4-Chlorotoluene	20.9500	0.50	20.0000	105	78 - 136	3.70	20
4-Isopropyltoluene	23.2100	0.50	20.0000	116	75 - 146	3.80	20
Benzene	41.0300	0.50	40.0000	103	72 - 127	6.51	20
Bromobenzene	19.7200	0.50	20.0000	98.6	74 - 123	3.63	20
Bromodichloromethane	19.5100	0.50	20.0000	97.6	74 - 130	7.07	20
Bromoform	20.1200	0.50	20.0000	101	74 - 135	7.05	20
Bromomethane	25.7100	0.50	20.0000	129	14 - 166	7.88	20
Carbon tetrachloride	25.1800	0.50	20.0000	126	57 - 162	5.60	20
Chlorobenzene	19.7700	0.50	20.0000	98.8	78 - 125	4.31	20
Chloroethane	22.3800	0.50	20.0000	112	54 - 144	3.77	20
Chloroform	19.8100	0.50	20.0000	99.0	66 - 132	6.87	20
Chloromethane	19.8000	0.50	20.0000	99.0	31 - 128	1.90	20
cis-1,2-Dichloroethene	20.0000	0.50	20.0000	100	68 - 124	10.3	20
cis-1,3-Dichloropropene	22.0600	0.50	20.0000	110	63 - 139	7.25	20
Dibromochloromethane	20.1100	0.50	20.0000	101	78 - 132	4.38	20
Dibromomethane	19.2600	0.50	20.0000	96.3	76 - 122	6.43	20
Dichlorodifluoromethane	27.1800	0.50	20.0000	136	17 - 171	7.37	20



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Reported : 03/24/2016

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
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Batch B6C0142 - MSVOA_LL_W (continued)

LCS Dup (B6C0142-BSD1) - Continued

Prepared: 3/7/2016 Analyzed: 3/7/2016

Ethylbenzene	41.4600	0.50	40.0000		104	71 - 142	7.27	20	
Hexachlorobutadiene	22.7500	0.50	20.0000		114	54 - 169	3.54	20	
Isopropylbenzene	24.7100	0.50	20.0000		124	76 - 146	2.44	20	
m,p-Xylene	43.2600	1.0	40.0000		108	75 - 150	7.43	20	
Methylene chloride	17.6700	1.0	20.0000		88.4	66 - 130	6.36	20	
n-Butylbenzene	24.0400	0.50	20.0000		120	76 - 151	3.43	20	
n-Propylbenzene	23.0500	0.50	20.0000		115	76 - 147	2.40	20	
Naphthalene	21.7200	0.50	20.0000		109	36 - 180	4.68	20	
o-Xylene	43.4200	0.50	40.0000		109	75 - 143	4.46	20	
sec-Butylbenzene	23.4600	0.50	20.0000		117	77 - 147	2.82	20	
Styrene	20.5500	0.50	20.0000		103	75 - 133	7.13	20	
tert-Butylbenzene	23.1600	0.50	20.0000		116	75 - 143	3.06	20	
Tetrachloroethene	21.8300	0.50	20.0000		109	58 - 139	5.09	20	
Toluene	40.9700	0.50	40.0000		102	59 - 140	5.92	20	
trans-1,2-Dichloroethene	20.5900	0.50	20.0000		103	63 - 128	7.97	20	
Trichloroethene	22.0200	0.50	20.0000		110	67 - 130	6.71	20	
Trichlorofluoromethane	25.0800	0.50	20.0000		125	56 - 168	7.45	20	
Vinyl chloride	23.3000	0.50	20.0000		116	49 - 146	4.53	20	
<hr/>									
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>25.16</i>		<i>25.0000</i>		<i>101</i>	<i>49 - 148</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>26.16</i>		<i>25.0000</i>		<i>105</i>	<i>65 - 132</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>25.38</i>		<i>25.0000</i>		<i>102</i>	<i>55 - 138</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.43</i>		<i>25.0000</i>		<i>102</i>	<i>60 - 120</i>			



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

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

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B6C0173 - MSEMISOTOPEDILN

Blank (B6C0173-BLK1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

1,4-Dioxane	ND	2.0		NR					
Surrogate: 1,2-Dichlorobenzene-d4	51.46		100.000	51.5	42 - 106				
Surrogate: 2-Fluorobiphenyl	70.34		100.000	70.3	55 - 117				
Surrogate: 4-Terphenyl-d14	105.6		100.000	106	52 - 142				
Surrogate: Nitrobenzene-d5	78.06		100.000	78.1	43 - 116				

LCS (B6C0173-BS1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

1,4-Dioxane	96.9900	2.0	100.000	97.0	62 - 127				
Surrogate: 1,2-Dichlorobenzene-d4	61.26		100.000	61.3	42 - 106				
Surrogate: 2-Fluorobiphenyl	88.20		100.000	88.2	55 - 117				
Surrogate: 4-Terphenyl-d14	97.41		100.000	97.4	52 - 142				
Surrogate: Nitrobenzene-d5	97.33		100.000	97.3	43 - 116				

LCS Dup (B6C0173-BSD1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

1,4-Dioxane	96.4700	2.0	100.000	96.5	62 - 127	0.538	20		
Surrogate: 1,2-Dichlorobenzene-d4	60.20		100.000	60.2	42 - 106				
Surrogate: 2-Fluorobiphenyl	83.98		100.000	84.0	55 - 117				
Surrogate: 4-Terphenyl-d14	98.55		100.000	98.6	52 - 142				
Surrogate: Nitrobenzene-d5	95.02		100.000	95.0	43 - 116				



Certificate of Analysis

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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

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
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Batch B6C0172 - MSEMISOTOPEDILN

Blank (B6C0172-BLK1)

Prepared: 3/7/2016 Analyzed: 3/7/2016

1,4-Dioxane	ND	0.20			NR				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.7127		1.00000		71.3	39 - 99			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.8107		1.00000		81.1	47 - 111			
<i>Surrogate: 4-Terphenyl-d14</i>	0.9093		1.00000		90.9	44 - 150			
<i>Surrogate: Nitrobenzene-d5</i>	0.7718		1.00000		77.2	20 - 144			

LCS (B6C0172-BS1)

Prepared: 3/7/2016 Analyzed: 3/7/2016

1,4-Dioxane	0.994920	0.20	1.00000		99.5	58 - 151			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.7301		1.00000		73.0	39 - 99			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.8305		1.00000		83.0	47 - 111			
<i>Surrogate: 4-Terphenyl-d14</i>	0.8973		1.00000		89.7	44 - 150			
<i>Surrogate: Nitrobenzene-d5</i>	0.7974		1.00000		79.7	20 - 144			

LCS Dup (B6C0172-BSD1)

Prepared: 3/7/2016 Analyzed: 3/7/2016

1,4-Dioxane	1.13118	0.20	1.00000		113	58 - 151	12.8	20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.7201		1.00000		72.0	39 - 99			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.8220		1.00000		82.2	47 - 111			
<i>Surrogate: 4-Terphenyl-d14</i>	0.8802		1.00000		88.0	44 - 150			
<i>Surrogate: Nitrobenzene-d5</i>	0.7828		1.00000		78.3	20 - 144			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 03/24/2016

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.

Client: Advanced Technology Laboratories
 Job No.: 202513

Bromate by EPA 317.0
 Ion Chromatography with Post-Column Derivatization-Visible Absorption

Column: Dionex AS9-HC 250 mm x 4 mm, AG9-HC Guard 50 mm x 4 mm
 Eluent: 10 mM Na₂CO₃
 Flow: 1.2 mL/min
 Injection: 250 µL
 Detection: Post-column derivatization, Visible detection, 450 nm

Sample preparation: The undiluted sample was treated with a Dionex OnGuard II H cartridge to remove excess basic cations.

Parts Per Billion (µg/L)

<u>Sample ID</u>	<u>Result</u>
ATL Lab#: 1600807-04 / POX	ND
Method Blank	ND
Detection Limit	1
Date Analyzed:	03-21-16

Quality Control Summary

Sample ID:	Batch QC						
<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	ND	20	20	100	20	100	0
QC Guidelines				75-125		75-125	NMT 10

Exova Inc – Santa Fe Springs – 562-948-2225
 The above data is considered preliminary and may not reflect final reported values.
 A final signed report will be mailed to you.


ADVANCED TECHNOLOGY
 LABORATORIES

SUBCONTRACT ORDER

Work Order: 1600807

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#: SC10254- STANDARD TAT *RA*

IMPORTANT : Please include Work Order # and PO # in your invoice.

Analysis	Due	Expires	Matrix	Date Sampled
ATL Lab#: 1600807-04 / POX 317.0_SUB [Bromate] 1-Poly Unpres - 125mL Comments:	03/17/16 17:00	03/04/16 08:07	Groundwater	03/03/16 08:07

Released By *fl* Date *03/04/16 1255* Received By *ATL* Date *3/4/16 1255*
 Released By *ATL* Date *3/4/16 1413* Received By *Andrew* Date *03-04-16 02:16*

PROJECT: Raytheon Main GETS Monthly Sample

TASK NO.: 532.15

Project Manager Steve Netto
QA Manager Marcos Rodriguez
Phone 858.455.6500
Fax 858.455.6533

Sampled By: _____

LAB ID		SAMPLE ID		Date	Time
1600807 - 01		TB-030316		3/3/2016	7:00
- 2		CEFF			7:45
- 3		CBT			8:05
- 4		POX			8:07
- 5		PF			8:15
- 6		INF			8:25
- 7		EW-02		8:55	8:50
- 8		MW-29			9:05
					9:07

MATRIX	PRESERVATION	CONTAINERS					ANALYSIS REQUESTED										Expected Concentration Range (ppb) for VOA's				SPECIAL HANDLING															
		Groundwater	Lab prepared water	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sodium Hydroxide (NaOH)	Sulfuric Acid (H ₂ SO ₄)	Ice	40-ml VOA	125 mL Poly	250 mL Poly	250 mL Glass	1 L Poly	1 L Amber	VOCs by EPA 8260B	Bromate by EPA 317	Bromide by EPA 300	Alkalinity by SM2320B	Total Organic Carbon by SM5310B	Total Suspended Solids by SM2540D	UV Absorption EPA 415.3 @254 nm	1,4-Dioxane by EPA 8270C MOD	1,4-Dioxane by EPA 8270C SIM	0 - 10	10 - 100	100 - 1,000	>1,000	24 hr TAT	48 hr TAT	5 Day TAT	Level IV Data Validation Requested	MS/MSD Requested				
	X	X	X			X	2								X									X												
	X	X				X	3						1	X									X	X												
	X	X				X	3							X									X													
	X	X		X	X	X	6	1	1				1	X	X		X	X					X	X												
	X			X	X	X	3		1	1	1						X	X	X	X																
	X	X				X	3	1					1	X	X							X		X												
	X	X				X	3	1					1	X	X							X			X											
	X	X				X	3	1					1	X	X							X		X												

Laboratory
Advanced Technology Laboratories
Attn: Rachelle Arada
3275 Walnut Ave
Signal Hill, CA 90755
(562) 989-4045

Total number of containers per analysis:		26 4 2 1 1 5		Total No. of Containers: 39
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time	
<i>Ken J. H+H</i>	3/3/16 14:30	<i>MARCOS RODRIGUEZ</i>	3/3/16 1430	
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time	
<i>Steve Netto</i>	3/3/16 16:15	<i>FRANCO</i>	3/3/16 1615	

- No. of containers correct
- Received in good condition
- Custody seals secure
- Conforms to COC document

Send Results to:
Steve Netto
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122
Ph: 858.455.5400
snetto@hargis.com

Instructions
Fill out form completely and sign only after verified for completeness
Complete in ballpoint pen. Draw one line through error, initial and date correction
Indicate the number of sample containers in analytical 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.

March 11, 2016

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 : 1600809

Client Reference : Raytheon Main GETS Quarterly Sample, 532.15

Enclosed are the results for sample(s) received on March 03, 2016 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,



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 GETS Quarterly Sample,

Report To : Steve Netto

Reported : 03/11/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CEFF	1600809-01	Groundwater	3/03/16 7:45	3/03/16 14:30
POX	1600809-02	Groundwater	3/03/16 8:07	3/03/16 14:30
EW-02	1600809-03	Groundwater	3/03/16 8:55	3/03/16 14:30
MW-29	1600809-04	Groundwater	3/03/16 9:07	3/03/16 14:30
INF	1600809-05	Groundwater	3/03/16 8:25	3/03/16 14:30

CASE NARRATIVE

Sample Receiving/General Comments:

The following analytes lists were taken from sample containers:

Alkalinity - Hydroxide, Bicarbonate, Carbonate, and Total

Dissolved metals - Se, Fe, Mn, Ca, Na, Mg

Anions - Cl, SO₄, NO₃, NO₂, PO₄



Certificate of Analysis

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Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 03/11/2016

Client Sample ID CEFF

Lab ID: 1600809-01

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	650	10	1	B6C0228	03/07/2016	03/08/16 09:30	



Certificate of Analysis

Hargis & Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,
 Report To : Steve Netto
 Reported : 03/11/2016

Client Sample ID POX

Lab ID: 1600809-02

Anions Scan by Ion Chromatography EPA 300.0

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	110	10	20	B6C0233	03/04/2016	03/04/16 18:40	
Nitrate, as N	5.6	0.20	2	B6C0233	03/04/2016	03/04/16 16:12	
Nitrite, as N	ND	0.20	2	B6C0233	03/04/2016	03/04/16 16:12	D1
ortho-Phosphate, as P	ND	0.10	2	B6C0233	03/04/2016	03/04/16 16:12	D1
Sulfate	150	20	20	B6C0233	03/04/2016	03/04/16 18:40	

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	B6C0174	03/04/2016	03/04/16 09:59	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	650	10	1	B6C0228	03/07/2016	03/08/16 09:30	

Chemical Oxygen Demand by EPA 410.4

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B6C0153	03/07/2016	03/07/16 13:52	



Certificate of Analysis

Hargis & Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,
 Report To : Steve Netto
 Reported : 03/11/2016

Client Sample ID EW-02

Lab ID: 1600809-03

Anions Scan by Ion Chromatography EPA 300.0

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	90	10	20	B6C0233	03/04/2016	03/04/16 19:26	
Nitrate, as N	5.2	0.20	2	B6C0233	03/04/2016	03/04/16 16:24	
Nitrite, as N	ND	0.20	2	B6C0233	03/04/2016	03/04/16 16:24	D1
ortho-Phosphate, as P	ND	0.10	2	B6C0233	03/04/2016	03/04/16 16:24	D1
Sulfate	150	20	20	B6C0233	03/04/2016	03/04/16 19:26	

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	B6C0174	03/04/2016	03/04/16 09:59	

Alkalinity, Speciated by SM 2320B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO3)	200	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	
Alkalinity, Carbonate (as CaCO3)	ND	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	
Alkalinity, Hydroxide (as CaCO3)	ND	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	
Alkalinity, Total (as CaCO3)	200	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	600	10	1	B6C0228	03/07/2016	03/08/16 09:30	

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	ND	3.0	1	B6C0229	03/08/2016	03/08/16 11:46	

Chemical Oxygen Demand by EPA 410.4

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
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Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 03/11/2016

Client Sample ID EW-02

Lab ID: 1600809-03

Chemical Oxygen Demand by EPA 410.4

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B6C0153	03/07/2016	03/07/16 13:52	

Total Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Selenium	ND	0.010	1	B6C0194	03/08/2016	03/08/16 16:36	

Dissolved Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Calcium	83	0.50	1	B6C0192	03/08/2016	03/08/16 16:03	
Iron	ND	0.50	1	B6C0192	03/08/2016	03/08/16 16:03	
Magnesium	26	0.10	1	B6C0192	03/08/2016	03/08/16 16:03	
Manganese	ND	0.50	1	B6C0192	03/08/2016	03/08/16 16:04	
Selenium	ND	0.010	1	B6C0192	03/08/2016	03/08/16 16:04	
Sodium	72	1.0	1	B6C0192	03/08/2016	03/08/16 16:03	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 03/11/2016

Client Sample ID MW-29

Lab ID: 1600809-04

Anions Scan by Ion Chromatography EPA 300.0

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	180	10	20	B6C0233	03/04/2016	03/04/16 19:37	
Nitrate, as N	7.5	0.20	2	B6C0233	03/04/2016	03/04/16 16:35	
Nitrite, as N	ND	0.20	2	B6C0233	03/04/2016	03/04/16 16:35	D1
ortho-Phosphate, as P	ND	0.10	2	B6C0233	03/04/2016	03/04/16 16:35	D1
Sulfate	140	20	20	B6C0233	03/04/2016	03/04/16 19:37	

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	B6C0174	03/04/2016	03/04/16 09:59	

Alkalinity, Speciated by SM 2320B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO ₃)	230	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	
Alkalinity, Total (as CaCO ₃)	230	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	800	10	1	B6C0228	03/07/2016	03/08/16 09:30	

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	ND	3.0	1	B6C0229	03/08/2016	03/08/16 12:03	

Chemical Oxygen Demand by EPA 410.4

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
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Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 03/11/2016

Client Sample ID MW-29

Lab ID: 1600809-04

Chemical Oxygen Demand by EPA 410.4

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	8.2	5.0	1	B6C0153	03/07/2016	03/07/16 13:52	

Total Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Selenium	ND	0.010	1	B6C0194	03/08/2016	03/08/16 16:46	

Dissolved Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Calcium	110	0.50	1	B6C0192	03/08/2016	03/08/16 16:13	
Iron	ND	0.50	1	B6C0192	03/08/2016	03/08/16 16:13	
Magnesium	32	0.10	1	B6C0192	03/08/2016	03/08/16 16:13	
Manganese	ND	0.50	1	B6C0192	03/08/2016	03/08/16 16:14	
Selenium	ND	0.010	1	B6C0192	03/08/2016	03/08/16 16:14	
Sodium	99	1.0	1	B6C0192	03/08/2016	03/08/16 16:13	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 03/11/2016

Client Sample ID INF

Lab ID: 1600809-05

Anions Scan by Ion Chromatography EPA 300.0

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	110	10	20	B6C0233	03/04/2016	03/04/16 19:49	
Nitrate, as N	4.5	0.20	2	B6C0233	03/04/2016	03/04/16 16:46	
Nitrite, as N	ND	0.20	2	B6C0233	03/04/2016	03/04/16 16:46	D1
ortho-Phosphate, as P	ND	0.10	2	B6C0233	03/04/2016	03/04/16 16:46	D1
Sulfate	150	20	20	B6C0233	03/04/2016	03/04/16 19:49	

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	B6C0174	03/04/2016	03/04/16 09:59	

Alkalinity, Speciated by SM 2320B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO3)	200	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	
Alkalinity, Carbonate (as CaCO3)	ND	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	
Alkalinity, Hydroxide (as CaCO3)	ND	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	
Alkalinity, Total (as CaCO3)	200	5.0	1	B6C0303	03/10/2016	03/10/16 09:30	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	640	10	1	B6C0228	03/07/2016	03/08/16 09:30	

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	ND	3.0	1	B6C0229	03/08/2016	03/08/16 12:22	

Chemical Oxygen Demand by EPA 410.4

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
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Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 03/11/2016

Client Sample ID INF

Lab ID: 1600809-05

Chemical Oxygen Demand by EPA 410.4

Analyst: LA

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B6C0153	03/07/2016	03/07/16 13:52	

Total Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Selenium	ND	0.010	1	B6C0194	03/08/2016	03/08/16 16:50	

Dissolved Metals by ICP-AES EPA 6010B

Analyst: RR

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Calcium	85	0.50	1	B6C0192	03/08/2016	03/08/16 16:17	
Iron	ND	0.50	1	B6C0192	03/08/2016	03/08/16 16:17	
Magnesium	26	0.10	1	B6C0192	03/08/2016	03/08/16 16:17	
Manganese	ND	0.50	1	B6C0192	03/08/2016	03/08/16 16:18	
Selenium	ND	0.010	1	B6C0192	03/08/2016	03/08/16 16:18	
Sodium	75	1.0	1	B6C0192	03/08/2016	03/08/16 16:17	



Certificate of Analysis

Hargis & Associates, Inc.
 9171 Towne Centre Drive, Suite 375
 San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,
 Report To : Steve Netto
 Reported : 03/11/2016

QUALITY CONTROL SECTION

Alkalinity, Speciated by SM 2320B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B6C0303 - No_Prep_WC1_W

Blank (B6C0303-BLK1)

Prepared: 3/10/2016 Analyzed: 3/10/2016

Alkalinity, Bicarbonate (as CaCO3)	ND	5.0			NR			
Alkalinity, Carbonate (as CaCO3)	ND	5.0			NR			
Alkalinity, Hydroxide (as CaCO3)	ND	5.0			NR			
Alkalinity, Total (as CaCO3)	ND	5.0			NR			

LCS (B6C0303-BS1)

Prepared: 3/10/2016 Analyzed: 3/10/2016

Alkalinity, Total (as CaCO3)	90.2300	5.0	99.9580		90.3	80 - 120		
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Duplicate (B6C0303-DUP1)

Source: 1600807-04

Prepared: 3/10/2016 Analyzed: 3/10/2016

Alkalinity, Total (as CaCO3)	201.130	5.0		202.070	NR		0.466	20
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Matrix Spike (B6C0303-MS1)

Source: 1600807-04

Prepared: 3/10/2016 Analyzed: 3/10/2016

Alkalinity, Total (as CaCO3)	289.470	5.0	99.9580	202.070	87.4	80 - 120		
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Matrix Spike Dup (B6C0303-MSD1)

Source: 1600807-04

Prepared: 3/10/2016 Analyzed: 3/10/2016

Alkalinity, Total (as CaCO3)	290.410	5.0	99.9580	202.070	88.4	80 - 120	0.324	20
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San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 03/11/2016

Total Dissolved Solids (Residue, Filterable) by SM 2540C - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B6C0228 - No_Prep_WC1_W

Blank (B6C0228-BLK1)

Prepared: 3/7/2016 Analyzed: 3/8/2016

Residue, Dissolved

ND

10

NR

LCS (B6C0228-BS1)

Prepared: 3/7/2016 Analyzed: 3/8/2016

Residue, Dissolved

979.000

10

988.000

99.1

80 - 120

Duplicate (B6C0228-DUP1)

Source: 1600786-01

Prepared: 3/7/2016 Analyzed: 3/8/2016

Residue, Dissolved

ND

10

ND

NR

10



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 San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,
 Report To : Steve Netto
 Reported : 03/11/2016

Anions Scan by Ion Chromatography EPA 300.0 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec % Rec	Limits	RPD	RPD Limit	Notes
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Batch B6C0233 - No_Prep_IC1_W

Blank (B6C0233-BLK1)

Prepared: 3/4/2016 Analyzed: 3/4/2016

Chloride	ND	0.50		NR					
Nitrate, as N	ND	0.10		NR					
Nitrite, as N	ND	0.10		NR					
ortho-Phosphate, as P	ND	0.05		NR					
Sulfate	ND	1.0		NR					

LCS (B6C0233-BS1)

Prepared: 3/4/2016 Analyzed: 3/4/2016

Chloride	0.973400	0.50	1.00000	97.3	90 - 110				
Nitrate, as N	0.929600	0.10	1.00000	93.0	90 - 110				
Nitrite, as N	1.00810	0.10	1.00000	101	90 - 110				
ortho-Phosphate, as P	1.01700	0.05	1.00000	102	90 - 110				
Sulfate	1.86460	1.0	2.00000	93.2	90 - 110				

Duplicate (B6C0233-DUP1)

Source: 1600809-02

Prepared: 3/4/2016 Analyzed: 3/4/2016

Chloride	107.058	10		108.852	NR	1.66	20		
Nitrate, as N	5.09400	2.0		5.56400	NR	8.82	20		
Nitrite, as N	ND	2.0		ND	NR		20		
ortho-Phosphate, as P	ND	1.0		ND	NR		20		
Sulfate	149.490	20		150.638	NR	0.765	20		

Matrix Spike (B6C0233-MS1)

Source: 1600809-02

Prepared: 3/4/2016 Analyzed: 3/4/2016

Chloride	7.53290		2.50000	5.44260	83.6	80 - 120			
Nitrate, as N	3.11580		2.50000	0.278200	114	80 - 120			
Nitrite, as N	3.05860		2.50000	ND	122	80 - 120			M1
ortho-Phosphate, as P	3.10890		2.50000	ND	124	80 - 120			M1
Sulfate	11.8894		5.00000	7.53190	87.1	80 - 120			

Matrix Spike Dup (B6C0233-MSD1)

Source: 1600809-02

Prepared: 3/4/2016 Analyzed: 3/4/2016

Chloride	7.54590		2.50000	5.44260	84.1	80 - 120	0.172	20	
Nitrate, as N	3.12280		2.50000	0.278200	114	80 - 120	0.224	20	
Nitrite, as N	3.07660		2.50000	ND	123	80 - 120	0.587	20	M1
ortho-Phosphate, as P	3.11970		2.50000	ND	125	80 - 120	0.347	20	M1
Sulfate	11.8796		5.00000	7.53190	87.0	80 - 120	0.0825	20	



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Project Number : Raytheon Main GETS Quarterly Sample,
 Report To : Steve Netto
 Reported : 03/11/2016

UV Absorption by EPA 415.3 - Quality Control

Analyte	Result (1/cm)	PQL (1/cm)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B6C0174 - No_Prep_II_W

Blank (B6C0174-BLK1)									
UV Absorption	ND	0.01							
				Prepared: 3/4/2016	Analyzed: 3/4/2016				
						NR			
Duplicate (B6C0174-DUP1)		Source: 1600807-05							
UV Absorption	ND	0.01		ND	NR			20	
				Prepared: 3/4/2016	Analyzed: 3/4/2016				
Duplicate (B6C0174-DUP2)		Source: 1600809-02							
UV Absorption	ND	0.01		ND	NR			20	
				Prepared: 3/4/2016	Analyzed: 3/4/2016				
Duplicate (B6C0174-DUP3)		Source: 1600809-03							
UV Absorption	ND	0.01		ND	NR			20	
				Prepared: 3/4/2016	Analyzed: 3/4/2016				
Duplicate (B6C0174-DUP4)		Source: 1600809-04							
UV Absorption	ND	0.01		ND	NR			20	
				Prepared: 3/4/2016	Analyzed: 3/4/2016				
Duplicate (B6C0174-DUP5)		Source: 1600809-05							
UV Absorption	ND	0.01		ND	NR			20	
				Prepared: 3/4/2016	Analyzed: 3/4/2016				



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Project Number : Raytheon Main GETS Quarterly Sample,
 Report To : Steve Netto
 Reported : 03/11/2016

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
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Batch B6C0229 - No_Prep_II_W

Blank (B6C0229-BLK1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

Organic Carbon, Total

ND 3.0

NR

LCS (B6C0229-BS1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

Organic Carbon, Total

18.8000 3.0 20.0000

94.0 80 - 120

LCS Dup (B6C0229-BSD1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

Organic Carbon, Total

16.4400 3.0 20.0000

82.2 80 - 120 13.4 20



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 San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,
 Report To : Steve Netto
 Reported : 03/11/2016

Chemical Oxygen Demand by EPA 410.4 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B6C0153 - Prep_WC1_W

Blank (B6C0153-BLK1)				Prepared: 3/7/2016 Analyzed: 3/7/2016					
Chemical Oxygen Demand	ND	5.0			NR				
LCS (B6C0153-BS1)				Prepared: 3/7/2016 Analyzed: 3/7/2016					
Chemical Oxygen Demand	500.745	5.0	501.500		99.8	80 - 120			
Matrix Spike (B6C0153-MS1)				Prepared: 3/7/2016 Analyzed: 3/7/2016					
Chemical Oxygen Demand	14726.7	100	10030.0	3366.94	113	80 - 120			
Matrix Spike Dup (B6C0153-MSD1)				Prepared: 3/7/2016 Analyzed: 3/7/2016					
Chemical Oxygen Demand	14787.9	100	10030.0	3366.94	114	80 - 120	0.414	20	



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 San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,
 Report To : Steve Netto
 Reported : 03/11/2016

Total Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B6C0194 - EPA 3010A_W

Blank (B6C0194-BLK1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

Selenium	ND	0.010			NR				
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LCS (B6C0194-BS1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

Selenium	0.869369	0.010	1.00000		86.9	80 - 120			
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Matrix Spike (B6C0194-MS1)

Source: 1600809-03

Prepared: 3/8/2016 Analyzed: 3/8/2016

Selenium	2.19034	0.010	2.50000	ND	87.6	77 - 125			
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Matrix Spike Dup (B6C0194-MSD1)

Source: 1600809-03

Prepared: 3/8/2016 Analyzed: 3/8/2016

Selenium	2.13844	0.010	2.50000	ND	85.5	77 - 125	2.40	20	
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 San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,
 Report To : Steve Netto
 Reported : 03/11/2016

Dissolved Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B6C0192 - EPA 3010A_W

Blank (B6C0192-BLK1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

Calcium	ND	0.50			NR			
Iron	ND	0.50			NR			
Magnesium	ND	0.10			NR			
Manganese	ND	0.50			NR			
Selenium	ND	0.010			NR			
Sodium	ND	1.0			NR			

LCS (B6C0192-BS1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

Calcium	19.5935	0.50	20.0000		98.0	80 - 120		
Iron	19.0544	0.50	20.0000		95.3	80 - 120		
Magnesium	18.9835	0.10	20.0000		94.9	80 - 120		
Manganese	9.23240	0.50	10.0000		92.3	80 - 120		
Selenium	0.875122	0.010	1.00000		87.5	80 - 120		
Sodium	20.3569	1.0	20.0000		102	80 - 120		

Matrix Spike (B6C0192-MS1)

Source: 1600809-03

Prepared: 3/8/2016 Analyzed: 3/8/2016

Calcium	101.687	0.50	20.0000	82.7699	94.6	34 - 168		
Iron	18.7294	0.50	20.0000	0.135485	93.0	65 - 138		
Magnesium	43.6084	0.10	20.0000	25.8080	89.0	57 - 146		
Manganese	9.24279	0.50	10.0000	ND	92.4	75 - 126		
Selenium	2.14069	0.010	2.50000	0.007138	85.3	77 - 125		
Sodium	92.1715	1.0	20.0000	71.6074	103	16 - 185		

Matrix Spike Dup (B6C0192-MSD1)

Source: 1600809-03

Prepared: 3/8/2016 Analyzed: 3/8/2016

Calcium	105.076	0.50	20.0000	82.7699	112	34 - 168	3.28	20
Iron	18.6690	0.50	20.0000	0.135485	92.7	65 - 138	0.323	20
Magnesium	44.6237	0.10	20.0000	25.8080	94.1	57 - 146	2.30	20
Manganese	9.28715	0.50	10.0000	ND	92.9	75 - 126	0.479	20
Selenium	2.18640	0.010	2.50000	0.007138	87.2	77 - 125	2.11	20
Sodium	95.4351	1.0	20.0000	71.6074	119	16 - 185	3.48	20



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 03/11/2016

Notes and Definitions

M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
D1	Sample required dilution due to possible 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.

PROJECT: Raytheon Main GETS Quarterly Sample
 TASK NO.: 532.15
 Project Manager Steve Netto
 QA Manager Marcos Rodriguez
 Phone 858.455.6500
 Fax 858.455.6533

Sampled By:	
LAB ID	SAMPLE ID
1600809 - 1	CEFF
2	POX
3	EW-02
4	MW-29
5	INF

SAMPLE COLLECTION				Groundwater	PRESERVATION					CONTAINERS					ANALYSIS REQUESTED								Expected Concentration Range (ppb) for VOA's			SPECIAL HANDLING					REMARKS	
Date	Time				Lab prepared water	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sodium Hydroxide (NaOH)	Sulfuric Acid (H ₂ SO ₄)	Ice	40-ml VOA	125 mL Poly	250 mL Poly	500 mL Poly	250 mL Glass	Alkalinity by EPA SM2320B	Anions by EPA 300	COD by EPA 410.4	Dissolved Metals by EPA 6010B	Total Dissolved Solids by EPA SM2540C	Total Organic Carbon by SM5310B	Total Se by EPA 6010B	UV Absorption EPA 415.3 @254 nm				24 hr TAT	48 hr TAT	5 Day TAT	Level IV Data Validation Requested		MS/MSD Requested
3/3/2016	7:45	X		X					X	1								X											X			
	8:07	X		X				X	X	2	1		1		X	X		X										X				
	8:55	X		X	X	X	X	X	X	3	2	2	2	1	X	X	X	X	X	X	X	X	X					X				
	9:07	X		X	X	X	X	X	X	3	2	2	2	1	X	X	X	X	X	X	X	X	X					X				
	8:25	X		X	X	X	X	X	X	3	2	2	2	1	X	X	X	X	X	X	X	X	X					X				

Laboratory
Advanced Technology Laboratories
 Attn: Rachele Arada
 3275 Walnut Ave
 Signal Hill, CA 90755
 (562) 989-4045

Total number of containers per analysis:				9	9	7	6	4
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time					
<i>Kevin J. HHA</i>	3/3/16 14:30	<i>Marcos Rodriguez</i>	3/3/16 1430					
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time					
<i>Marcos Rodriguez</i>	3/3/16 1615	<i>Steve Netto</i>	3/3/16 1615					

- No. of containers correct
- Received in good condition
- Custody seals secure
- Conforms to COC document

Send Results to:
Steve Netto
 9171 Towne Centre Drive
 Suite 375
 San Diego, CA 92122
 Ph: 858.455.5400
snetto@hargis.com

Instructions
 Fill out form completely and sign only after verified for completeness
 Complete in ballpoint pen. Draw one line through error, initial and date correction
 Indicate the number of sample containers in analytical request space; indicate choice with ✓ or ✗
 Note applicable preservatives, special instructions, and deviations from typical environmental samples.
 Consult project QA documents for specific instructions.

1.2 Temperature on receipt

March 10, 2016

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 : 1600810

Client Reference : Raytheon Main GETS OCSD Quarterly Sample, 532.15

Enclosed are the results for sample(s) received on March 03, 2016 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,



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 GETS OCSD Quarterly S:

Report To : Steve Netto

Reported : 03/10/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CEFF	1600810-01	Groundwater	3/03/16 7:45	3/03/16 14:30



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS OCS D Quarterly S:

Report To : Steve Netto

Reported : 03/10/2016

Client Sample ID CEFF

Lab ID: 1600810-01

Volatile Organic Compounds by EPA 624

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1-Trichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
1,1,2-Trichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
1,1-Dichloroethane	0.57	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
1,1-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
1,2-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
1,2-Dichloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
1,2-Dichloropropane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
1,3-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
1,4-Dichlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
2-Chloroethyl vinyl ether	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Acrolein	ND	10	1	B6C0142	03/07/2016	03/07/16 12:20	
Acrylonitrile	ND	10	1	B6C0142	03/07/2016	03/07/16 12:20	
Benzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Bromodichloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Bromoform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Bromomethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Carbon tetrachloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Chlorobenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Chloroethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Chloroform	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Chloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
cis-1,3-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Dibromochloromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Ethylbenzene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
m,p-Xylene	ND	1.0	1	B6C0142	03/07/2016	03/07/16 12:20	
Methylene chloride	ND	1.0	1	B6C0142	03/07/2016	03/07/16 12:20	
o-Xylene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Tetrachloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Toluene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
trans-1,2-Dichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
trans-1,3-Dichloropropene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Trichloroethene	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Trichlorofluoromethane	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Vinyl chloride	ND	0.50	1	B6C0142	03/07/2016	03/07/16 12:20	
Surrogate: 1,2-Dichloroethane-d4	111 %	49 - 148		B6C0142	03/07/2016	03/07/16 12:20	
Surrogate: 4-Bromofluorobenzene	100 %	65 - 132		B6C0142	03/07/2016	03/07/16 12:20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS OCSD Quarterly S:

Report To : Steve Netto

Reported : 03/10/2016

Client Sample ID CEFF

Lab ID: 1600810-01

Volatile Organic Compounds by EPA 624

Analyst: SL

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<i>Surrogate: Dibromofluoromethane</i>	108 %	55 - 138		B6C0142	03/07/2016	03/07/16 12:20	
<i>Surrogate: Toluene-d8</i>	99.9 %	60 - 120		B6C0142	03/07/2016	03/07/16 12:20	

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	2.0	1	B6C0173	03/07/2016	03/08/16 19:31	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	57.0 %	42 - 106		B6C0173	03/07/2016	03/08/16 19:31	
<i>Surrogate: 2-Fluorobiphenyl</i>	72.6 %	55 - 117		B6C0173	03/07/2016	03/08/16 19:31	
<i>Surrogate: 4-Terphenyl-d14</i>	101 %	52 - 142		B6C0173	03/07/2016	03/08/16 19:31	
<i>Surrogate: Nitrobenzene-d5</i>	83.0 %	43 - 116		B6C0173	03/07/2016	03/08/16 19:31	



Certificate of Analysis

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Project Number : Raytheon Main GETS OCSD Quarterly S:

Report To : Steve Netto

Reported : 03/10/2016

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 624 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B6C0142 - MSVOA_LL_W

Blank (B6C0142-BLK1)

Prepared: 3/7/2016 Analyzed: 3/7/2016

1,1,1-Trichloroethane	ND	0.50				NR			
1,1,1,2-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			
1,2-Dichlorobenzene	ND	0.50				NR			
1,2-Dichloroethane	ND	0.50				NR			
1,2-Dichloropropane	ND	0.50				NR			
1,3-Dichlorobenzene	ND	0.50				NR			
1,4-Dichlorobenzene	ND	0.50				NR			
2-Chloroethyl vinyl ether	ND	0.50				NR			
Acrolein	ND	10				NR			
Acrylonitrile	ND	10				NR			
Benzene	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-1,3-Dichloropropene	ND	0.50				NR			
Dibromochloromethane	ND	0.50				NR			
Ethylbenzene	ND	0.50				NR			
m,p-Xylene	ND	1.0				NR			
Methylene chloride	ND	1.0				NR			
o-Xylene	ND	0.50				NR			
Tetrachloroethene	ND	0.50				NR			
Toluene	ND	0.50				NR			
trans-1,2-Dichloroethene	ND	0.50				NR			
trans-1,3-Dichloropropene	ND	0.50				NR			
Trichloroethene	ND	0.50				NR			
Trichlorofluoromethane	ND	0.50				NR			
Vinyl chloride	ND	0.50				NR			

<i>Surrogate: 1,2-Dichloroethane-d4</i>	25.05		25.0000		100	49 - 148			
<i>Surrogate: 4-Bromofluorobenzene</i>	24.64		25.0000		98.6	65 - 132			
<i>Surrogate: Dibromofluoromethane</i>	25.85		25.0000		103	55 - 138			
<i>Surrogate: Toluene-d8</i>	24.49		25.0000		98.0	60 - 120			



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main GETS OCSD Quarterly S:

Report To : Steve Netto

Reported : 03/10/2016

Volatile Organic Compounds by EPA 624 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B6C0142 - MSVOA_LL_W (continued)

LCS (B6C0142-BS1)

Prepared: 3/7/2016 Analyzed: 3/7/2016

1,1,1-Trichloroethane	24.7400	0.50	20.0000		124	68 - 141			
1,1,2,2-Tetrachloroethane	19.6900	0.50	20.0000		98.4	72 - 123			
1,1,2-Trichloroethane	20.2300	0.50	20.0000		101	63 - 129			
1,1-Dichloroethane	19.5800	0.50	20.0000		97.9	65 - 133			
1,1-Dichloroethene	24.3000	0.50	20.0000		122	61 - 136			
1,2-Dichlorobenzene	20.9200	0.50	20.0000		105	75 - 130			
1,2-Dichloroethane	20.4900	0.50	20.0000		102	71 - 131			
1,2-Dichloropropane	20.7600	0.50	20.0000		104	69 - 130			
1,3-Dichlorobenzene	21.1200	0.50	20.0000		106	76 - 129			
1,4-Dichlorobenzene	20.2800	0.50	20.0000		101	76 - 123			
2-Chloroethyl vinyl ether	33.8400	0.50	20.0000		169	29 - 144			L5
Acrolein	219.840	10	200.000		110	0 - 206			
Acrylonitrile	170.250	10	200.000		85.1	27 - 176			
Benzene	43.7900	0.50	40.0000		109	72 - 127			
Bromodichloromethane	20.9400	0.50	20.0000		105	74 - 130			
Bromoform	21.5900	0.50	20.0000		108	74 - 135			
Bromomethane	27.8200	0.50	20.0000		139	14 - 166			
Carbon tetrachloride	26.6300	0.50	20.0000		133	57 - 162			
Chlorobenzene	20.6400	0.50	20.0000		103	78 - 125			
Chloroethane	23.2400	0.50	20.0000		116	54 - 144			
Chloroform	21.2200	0.50	20.0000		106	66 - 132			
Chloromethane	20.1800	0.50	20.0000		101	31 - 128			
cis-1,3-Dichloropropene	23.7200	0.50	20.0000		119	63 - 139			
Dibromochloromethane	21.0100	0.50	20.0000		105	78 - 132			
Ethylbenzene	44.5900	0.50	40.0000		111	71 - 142			
m,p-Xylene	46.6000	1.0	40.0000		116	75 - 150			
Methylene chloride	18.8300	1.0	20.0000		94.2	66 - 130			
o-Xylene	45.4000	0.50	40.0000		114	75 - 143			
Tetrachloroethene	22.9700	0.50	20.0000		115	58 - 139			
Toluene	43.4700	0.50	40.0000		109	59 - 140			
trans-1,2-Dichloroethene	22.3000	0.50	20.0000		112	63 - 128			
trans-1,3-Dichloropropene	20.5800	0.50	20.0000		103	54 - 142			
Trichloroethene	23.5500	0.50	20.0000		118	67 - 130			
Trichlorofluoromethane	27.0200	0.50	20.0000		135	56 - 168			
Vinyl chloride	24.3800	0.50	20.0000		122	49 - 146			

<i>Surrogate: 1,2-Dichloroethane-d4</i>	26.26		25.0000		105	49 - 148			
<i>Surrogate: 4-Bromofluorobenzene</i>	26.51		25.0000		106	65 - 132			
<i>Surrogate: Dibromofluoromethane</i>	25.88		25.0000		104	55 - 138			
<i>Surrogate: Toluene-d8</i>	25.74		25.0000		103	60 - 120			

LCS Dup (B6C0142-BSD1)

Prepared: 3/7/2016 Analyzed: 3/7/2016

1,1,1-Trichloroethane	23.1000	0.50	20.0000		116	68 - 141	6.86	20	
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Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS OCSD Quarterly S

Report To : Steve Netto

Reported : 03/10/2016

Volatile Organic Compounds by EPA 624 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B6C0142 - MSVOA_LL_W (continued)

LCS Dup (B6C0142-BSD1) - Continued

Prepared: 3/7/2016 Analyzed: 3/7/2016

1,1,2,2-Tetrachloroethane	19.4200	0.50	20.0000		97.1	72 - 123	1.38	20	
1,1,2-Trichloroethane	19.0900	0.50	20.0000		95.4	63 - 129	5.80	20	
1,1-Dichloroethane	18.3800	0.50	20.0000		91.9	65 - 133	6.32	20	
1,1-Dichloroethene	22.9500	0.50	20.0000		115	61 - 136	5.71	20	
1,2-Dichlorobenzene	20.0200	0.50	20.0000		100	75 - 130	4.40	20	
1,2-Dichloroethane	19.3100	0.50	20.0000		96.6	71 - 131	5.93	20	
1,2-Dichloropropane	19.4100	0.50	20.0000		97.0	69 - 130	6.72	20	
1,3-Dichlorobenzene	20.1900	0.50	20.0000		101	76 - 129	4.50	20	
1,4-Dichlorobenzene	19.8800	0.50	20.0000		99.4	76 - 123	1.99	20	
2-Chloroethyl vinyl ether	36.0800	0.50	20.0000		180	29 - 144	6.41	20	L5
Acrolein	213.820	10	200.000		107	0 - 206	2.78	20	
Acrylonitrile	167.690	10	200.000		83.8	27 - 176	1.52	20	
Benzene	41.0300	0.50	40.0000		103	72 - 127	6.51	20	
Bromodichloromethane	19.5100	0.50	20.0000		97.6	74 - 130	7.07	20	
Bromoform	20.1200	0.50	20.0000		101	74 - 135	7.05	20	
Bromomethane	25.7100	0.50	20.0000		129	14 - 166	7.88	20	
Carbon tetrachloride	25.1800	0.50	20.0000		126	57 - 162	5.60	20	
Chlorobenzene	19.7700	0.50	20.0000		98.8	78 - 125	4.31	20	
Chloroethane	22.3800	0.50	20.0000		112	54 - 144	3.77	20	
Chloroform	19.8100	0.50	20.0000		99.0	66 - 132	6.87	20	
Chloromethane	19.8000	0.50	20.0000		99.0	31 - 128	1.90	20	
cis-1,3-Dichloropropene	22.0600	0.50	20.0000		110	63 - 139	7.25	20	
Dibromochloromethane	20.1100	0.50	20.0000		101	78 - 132	4.38	20	
Ethylbenzene	41.4600	0.50	40.0000		104	71 - 142	7.27	20	
m,p-Xylene	43.2600	1.0	40.0000		108	75 - 150	7.43	20	
Methylene chloride	17.6700	1.0	20.0000		88.4	66 - 130	6.36	20	
o-Xylene	43.4200	0.50	40.0000		109	75 - 143	4.46	20	
Tetrachloroethene	21.8300	0.50	20.0000		109	58 - 139	5.09	20	
Toluene	40.9700	0.50	40.0000		102	59 - 140	5.92	20	
trans-1,2-Dichloroethene	20.5900	0.50	20.0000		103	63 - 128	7.97	20	
trans-1,3-Dichloropropene	19.1100	0.50	20.0000		95.6	54 - 142	7.41	20	
Trichloroethene	22.0200	0.50	20.0000		110	67 - 130	6.71	20	
Trichlorofluoromethane	25.0800	0.50	20.0000		125	56 - 168	7.45	20	
Vinyl chloride	23.3000	0.50	20.0000		116	49 - 146	4.53	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>25.16</i>		<i>25.0000</i>		<i>101</i>	<i>49 - 148</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>26.16</i>		<i>25.0000</i>		<i>105</i>	<i>65 - 132</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>25.38</i>		<i>25.0000</i>		<i>102</i>	<i>55 - 138</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.43</i>		<i>25.0000</i>		<i>102</i>	<i>60 - 120</i>			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS OCSD Quarterly S:

Report To : Steve Netto

Reported : 03/10/2016

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
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Batch B6C0173 - MSEMISOTOPEDILN

Blank (B6C0173-BLK1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

1,4-Dioxane	ND	2.0			NR				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	51.46		100.000		51.5	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	70.34		100.000		70.3	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	105.6		100.000		106	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	78.06		100.000		78.1	43 - 116			

LCS (B6C0173-BS1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

1,4-Dioxane	96.9900	2.0	100.000		97.0	62 - 127			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	61.26		100.000		61.3	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	88.20		100.000		88.2	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	97.41		100.000		97.4	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	97.33		100.000		97.3	43 - 116			

LCS Dup (B6C0173-BSD1)

Prepared: 3/8/2016 Analyzed: 3/8/2016

1,4-Dioxane	96.4700	2.0	100.000		96.5	62 - 127	0.538	20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	60.20		100.000		60.2	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	83.98		100.000		84.0	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	98.55		100.000		98.6	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	95.02		100.000		95.0	43 - 116			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS OCSD Quarterly S

Report To : Steve Netto

Reported : 03/10/2016

Notes and Definitions

L5	Laboratory Control Sample high biased. Sample result/s was non-detect (ND) for the target analyte; therefore reanalysis was not necessary.
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: Raytheon Main GETS OCSD Quarterly Sample

TASK NO.: 532.15

Project Manager Steve Netto

QA Manager Marcos Rodriguez

Phone 858.455.6500

Fax 858.455.6533

Laboratory
Advanced Technology Laboratories
Attn: Rachele Arada
3275 Walnut Ave
Signal Hill, CA 90755
(562) 989-4045

Sampled By:		SAMPLE COLLECTION		Groundwater	Lab prepared water	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sodium Hydroxide (NaOH)	Sulfuric Acid (H ₂ SO ₄)	Ice	40-ml VOA	1 L Amber	VOCs by EPA 624	1,4-Dioxane by EPA 8270C MOD	Expected Concentration Range (ppb) for VOA's				SPECIAL HANDLING			REMARKS			
LAB ID	SAMPLE ID	Date	Time												0 - 10	10 - 100	100 - 1,000	>1,000	24 hr TAT	48 hr TAT	5 Day TAT		Level IV Data Validation Requested	MS/MSD Requested	
	FD	3/3/2016		X	X					X	2		X			X									
100510-01	CEFF	3/13/16	7:45	X	X					X	3	1	X	X		X									

Total number of containers per analysis:			5	1			Total No. of Containers: 6
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time		<input type="checkbox"/> No. of containers correct <input type="checkbox"/> Received in good condition <input type="checkbox"/> Custody seals secure <input type="checkbox"/> Conforms to COC document		
<i>Kevin Jy H+A</i>	<u>3/13/16</u> <u>14:30</u>	<i>Marcos Rodriguez</i>	<u>3/13/16</u> <u>14:30</u>				
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time				
<i>Joe Arce</i>	<u>3/13/16</u> <u>16:15</u>	<i>FD</i>	<u>3/13/16</u> <u>16:15</u>				

Instructions
 Fill out form completely and sign only after verified for completeness
 Complete in ballpoint pen. Draw one line through error, initial and date correction
 Indicate the number of sample containers in analytical request space; indicate choice with ✓ or ✗
 Note applicable preservatives, special instructions, and deviations from typical environmental samples.
 Consult project QA documents for specific instructions.

1.2 °C Temperature on receipt

Send Results to:
Steve Netto
 9171 Towne Centre Drive
 Suite 375
 San Diego, CA 92122
 Ph: 858.455.5400
snetto@hargis.com

March 24, 2016

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 : 1601035

Client Reference : Raytheon Main GETS Mid Monthly Sample, 532.15

Enclosed are the results for sample(s) received on March 17, 2016 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,



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 GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 03/24/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-031716	1601035-01	Lab prepared water	3/17/16 7:00	3/17/16 10:25
CEFF	1601035-02	Groundwater	3/17/16 8:10	3/17/16 10:25
CBT	1601035-03	Groundwater	3/17/16 8:20	3/17/16 10:25
POX	1601035-04	Groundwater	3/17/16 8:25	3/17/16 10:25
INF	1601035-05	Groundwater	3/17/16 8:30	3/17/16 10:25
EW-02	1601035-06	Groundwater	3/17/16 9:05	3/17/16 10:25
MW-29	1601035-07	Groundwater	3/17/16 9:20	3/17/16 10:25



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID TB-031716

Lab ID: 1601035-01

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	B6C0498	03/18/2016	03/18/16 12:24	
1,1,1-Trichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,1,2-Trichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,1-Dichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,1-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,1-Dichloropropene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,2,3-Trichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,2,3-Trichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,2,4-Trichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,2,4-Trimethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,2-Dibromoethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,2-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,2-Dichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,2-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,3,5-Trimethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,3-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,3-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
1,4-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
2,2-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
2-Chlorotoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
4-Chlorotoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
4-Isopropyltoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Benzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Bromobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Bromodichloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Bromoform	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Bromomethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Carbon tetrachloride	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Chlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Chloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Chloroform	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Chloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
cis-1,2-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
cis-1,3-Dichloropropene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Dibromochloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID TB-031716

Lab ID: 1601035-01

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	B6C0498	03/18/2016	03/18/16 12:24	
Dichlorodifluoromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Ethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Hexachlorobutadiene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Isopropylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
m,p-Xylene	ND	1.0	1	B6C0498	03/18/2016	03/18/16 12:24	
Methylene chloride	ND	1.0	1	B6C0498	03/18/2016	03/18/16 12:24	
n-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
n-Propylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Naphthalene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
o-Xylene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
sec-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Styrene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
tert-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Tetrachloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Toluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
trans-1,2-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Trichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Trichlorofluoromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
Vinyl chloride	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:24	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>129 %</i>	<i>49 - 148</i>		B6C0498	03/18/2016	<i>03/18/16 12:24</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.2 %</i>	<i>65 - 132</i>		B6C0498	03/18/2016	<i>03/18/16 12:24</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>117 %</i>	<i>55 - 138</i>		B6C0498	03/18/2016	<i>03/18/16 12:24</i>	
<i>Surrogate: Toluene-d8</i>	<i>105 %</i>	<i>60 - 120</i>		B6C0498	03/18/2016	<i>03/18/16 12:24</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID CEFF

Lab ID: 1601035-02

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	B6C0498	03/18/2016	03/18/16 12:47	
1,1,1-Trichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,1,2-Trichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,1-Dichloroethane	0.71	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,1-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,1-Dichloropropene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,2,3-Trichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,2,3-Trichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,2,4-Trichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,2,4-Trimethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,2-Dibromoethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,2-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,2-Dichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,2-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,3,5-Trimethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,3-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,3-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
1,4-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
2,2-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
2-Chlorotoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
4-Chlorotoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
4-Isopropyltoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Benzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Bromobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Bromodichloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Bromoform	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Bromomethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Carbon tetrachloride	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Chlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Chloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Chloroform	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Chloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
cis-1,2-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
cis-1,3-Dichloropropene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Dibromochloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID CEFF

Lab ID: 1601035-02

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	B6C0498	03/18/2016	03/18/16 12:47	
Dichlorodifluoromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Ethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Hexachlorobutadiene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Isopropylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
m,p-Xylene	ND	1.0	1	B6C0498	03/18/2016	03/18/16 12:47	
Methylene chloride	ND	1.0	1	B6C0498	03/18/2016	03/18/16 12:47	
n-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
n-Propylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Naphthalene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
o-Xylene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
sec-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Styrene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
tert-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Tetrachloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Toluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
trans-1,2-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Trichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Trichlorofluoromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
Vinyl chloride	ND	0.50	1	B6C0498	03/18/2016	03/18/16 12:47	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>130 %</i>	<i>49 - 148</i>		B6C0498	03/18/2016	<i>03/18/16 12:47</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.7 %</i>	<i>65 - 132</i>		B6C0498	03/18/2016	<i>03/18/16 12:47</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>117 %</i>	<i>55 - 138</i>		B6C0498	03/18/2016	<i>03/18/16 12:47</i>	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>60 - 120</i>		B6C0498	03/18/2016	<i>03/18/16 12:47</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID CEFF

Lab ID: 1601035-02

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6C0601	03/22/2016	03/22/16 13:20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>46.6 %</i>	<i>33 - 98</i>		B6C0601	03/22/2016	<i>03/22/16 13:20</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>51.8 %</i>	<i>35 - 110</i>		B6C0601	03/22/2016	<i>03/22/16 13:20</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>65.0 %</i>	<i>37 - 158</i>		B6C0601	03/22/2016	<i>03/22/16 13:20</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>31.5 %</i>	<i>21 - 121</i>		B6C0601	03/22/2016	<i>03/22/16 13:20</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID CBT

Lab ID: 1601035-03

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	B6C0498	03/18/2016	03/18/16 13:08	
1,1,1-Trichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,1,2-Trichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,1-Dichloroethane	0.65	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,1-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,1-Dichloropropene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,2,3-Trichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,2,3-Trichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,2,4-Trichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,2,4-Trimethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,2-Dibromoethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,2-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,2-Dichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,2-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,3,5-Trimethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,3-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,3-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
1,4-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
2,2-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
2-Chlorotoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
4-Chlorotoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
4-Isopropyltoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Benzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Bromobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Bromodichloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Bromoform	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Bromomethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Carbon tetrachloride	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Chlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Chloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Chloroform	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Chloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
cis-1,2-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
cis-1,3-Dichloropropene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Dibromochloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID CBT

Lab ID: 1601035-03

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	B6C0498	03/18/2016	03/18/16 13:08	
Dichlorodifluoromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Ethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Hexachlorobutadiene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Isopropylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
m,p-Xylene	ND	1.0	1	B6C0498	03/18/2016	03/18/16 13:08	
Methylene chloride	ND	1.0	1	B6C0498	03/18/2016	03/18/16 13:08	
n-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
n-Propylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Naphthalene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
o-Xylene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
sec-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Styrene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
tert-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Tetrachloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Toluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
trans-1,2-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Trichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Trichlorofluoromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
Vinyl chloride	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:08	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>127 %</i>	<i>49 - 148</i>		B6C0498	03/18/2016	<i>03/18/16 13:08</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.2 %</i>	<i>65 - 132</i>		B6C0498	03/18/2016	<i>03/18/16 13:08</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>116 %</i>	<i>55 - 138</i>		B6C0498	03/18/2016	<i>03/18/16 13:08</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>60 - 120</i>		B6C0498	03/18/2016	<i>03/18/16 13:08</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID CBT

Lab ID: 1601035-03

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6C0601	03/22/2016	03/22/16 13:47	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>68.4 %</i>	<i>33 - 98</i>		B6C0601	03/22/2016	<i>03/22/16 13:47</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>74.0 %</i>	<i>35 - 110</i>		B6C0601	03/22/2016	<i>03/22/16 13:47</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>88.0 %</i>	<i>37 - 158</i>		B6C0601	03/22/2016	<i>03/22/16 13:47</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>41.5 %</i>	<i>21 - 121</i>		B6C0601	03/22/2016	<i>03/22/16 13:47</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID POX

Lab ID: 1601035-04

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	B6C0498	03/18/2016	03/18/16 13:31	
1,1,1-Trichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,1,2-Trichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,1-Dichloroethane	0.64	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,1-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,1-Dichloropropene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,2,3-Trichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,2,3-Trichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,2,4-Trichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,2,4-Trimethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,2-Dibromoethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,2-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,2-Dichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,2-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,3,5-Trimethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,3-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,3-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
1,4-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
2,2-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
2-Chlorotoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
4-Chlorotoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
4-Isopropyltoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Benzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Bromobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Bromodichloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Bromoform	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Bromomethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Carbon tetrachloride	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Chlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Chloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Chloroform	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Chloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
cis-1,2-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
cis-1,3-Dichloropropene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Dibromochloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID POX

Lab ID: 1601035-04

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	B6C0498	03/18/2016	03/18/16 13:31	
Dichlorodifluoromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Ethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Hexachlorobutadiene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Isopropylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
m,p-Xylene	ND	1.0	1	B6C0498	03/18/2016	03/18/16 13:31	
Methylene chloride	ND	1.0	1	B6C0498	03/18/2016	03/18/16 13:31	
n-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
n-Propylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Naphthalene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
o-Xylene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
sec-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Styrene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
tert-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Tetrachloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Toluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
trans-1,2-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Trichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Trichlorofluoromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
Vinyl chloride	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:31	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>131 %</i>	<i>49 - 148</i>		B6C0498	03/18/2016	<i>03/18/16 13:31</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>101 %</i>	<i>65 - 132</i>		B6C0498	03/18/2016	<i>03/18/16 13:31</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>119 %</i>	<i>55 - 138</i>		B6C0498	03/18/2016	<i>03/18/16 13:31</i>	
<i>Surrogate: Toluene-d8</i>	<i>105 %</i>	<i>60 - 120</i>		B6C0498	03/18/2016	<i>03/18/16 13:31</i>	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID POX

Lab ID: 1601035-04

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6C0601	03/22/2016	03/22/16 14:14	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>59.8 %</i>	<i>33 - 98</i>		B6C0601	03/22/2016	<i>03/22/16 14:14</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>67.5 %</i>	<i>35 - 110</i>		B6C0601	03/22/2016	<i>03/22/16 14:14</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>81.8 %</i>	<i>37 - 158</i>		B6C0601	03/22/2016	<i>03/22/16 14:14</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>38.0 %</i>	<i>21 - 121</i>		B6C0601	03/22/2016	<i>03/22/16 14:14</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID INF

Lab ID: 1601035-05

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	B6C0498	03/18/2016	03/18/16 14:15	
1,1,1-Trichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,1,2-Trichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,1-Dichloroethane	1.0	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,1-Dichloroethene	120	2.5	5	B6C0498	03/18/2016	03/18/16 15:21	D6
1,1-Dichloropropene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,2,3-Trichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,2,3-Trichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,2,4-Trichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,2,4-Trimethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,2-Dibromoethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,2-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,2-Dichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,2-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,3,5-Trimethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,3-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,3-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
1,4-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
2,2-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
2-Chlorotoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
4-Chlorotoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
4-Isopropyltoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Benzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Bromobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Bromodichloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Bromoform	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Bromomethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Carbon tetrachloride	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Chlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Chloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Chloroform	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Chloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
cis-1,2-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
cis-1,3-Dichloropropene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Dibromochloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main GETS Mid Monthly Sam

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 03/24/2016

Client Sample ID INF

Lab ID: 1601035-05

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	B6C0498	03/18/2016	03/18/16 14:15	
Dichlorodifluoromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Ethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Hexachlorobutadiene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Isopropylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
m,p-Xylene	ND	1.0	1	B6C0498	03/18/2016	03/18/16 14:15	
Methylene chloride	ND	1.0	1	B6C0498	03/18/2016	03/18/16 14:15	
n-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
n-Propylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Naphthalene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
o-Xylene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
sec-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Styrene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
tert-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Tetrachloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Toluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
trans-1,2-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Trichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Trichlorofluoromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
Vinyl chloride	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:15	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>134 %</i>	<i>49 - 148</i>		B6C0498	03/18/2016	<i>03/18/16 15:21</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>127 %</i>	<i>49 - 148</i>		B6C0498	03/18/2016	<i>03/18/16 14:15</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>100 %</i>	<i>65 - 132</i>		B6C0498	03/18/2016	<i>03/18/16 15:21</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.5 %</i>	<i>65 - 132</i>		B6C0498	03/18/2016	<i>03/18/16 14:15</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>118 %</i>	<i>55 - 138</i>		B6C0498	03/18/2016	<i>03/18/16 15:21</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>114 %</i>	<i>55 - 138</i>		B6C0498	03/18/2016	<i>03/18/16 14:15</i>	
<i>Surrogate: Toluene-d8</i>	<i>106 %</i>	<i>60 - 120</i>		B6C0498	03/18/2016	<i>03/18/16 15:21</i>	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>60 - 120</i>		B6C0498	03/18/2016	<i>03/18/16 14:15</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID INF

Lab ID: 1601035-05

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	33	2.0	1	B6C0513	03/18/2016	03/18/16 15:02	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	69.5 %	42 - 106		B6C0513	03/18/2016	03/18/16 15:02	
<i>Surrogate: 2-Fluorobiphenyl</i>	79.2 %	55 - 117		B6C0513	03/18/2016	03/18/16 15:02	
<i>Surrogate: 4-Terphenyl-d14</i>	91.6 %	52 - 142		B6C0513	03/18/2016	03/18/16 15:02	
<i>Surrogate: Nitrobenzene-d5</i>	74.4 %	43 - 116		B6C0513	03/18/2016	03/18/16 15:02	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID EW-02

Lab ID: 1601035-06

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	B6C0498	03/18/2016	03/18/16 13:53	
1,1,1-Trichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,1,2-Trichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,1-Dichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,1-Dichloroethene	35	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,1-Dichloropropene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,2,3-Trichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,2,3-Trichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,2,4-Trichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,2,4-Trimethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,2-Dibromoethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,2-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,2-Dichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,2-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,3,5-Trimethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,3-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,3-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
1,4-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
2,2-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
2-Chlorotoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
4-Chlorotoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
4-Isopropyltoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Benzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Bromobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Bromodichloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Bromoform	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Bromomethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Carbon tetrachloride	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Chlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Chloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Chloroform	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Chloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
cis-1,2-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
cis-1,3-Dichloropropene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Dibromochloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID EW-02

Lab ID: 1601035-06

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	B6C0498	03/18/2016	03/18/16 13:53	
Dichlorodifluoromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Ethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Hexachlorobutadiene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Isopropylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
m,p-Xylene	ND	1.0	1	B6C0498	03/18/2016	03/18/16 13:53	
Methylene chloride	ND	1.0	1	B6C0498	03/18/2016	03/18/16 13:53	
n-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
n-Propylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Naphthalene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
o-Xylene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
sec-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Styrene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
tert-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Tetrachloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Toluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
trans-1,2-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Trichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Trichlorofluoromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
Vinyl chloride	ND	0.50	1	B6C0498	03/18/2016	03/18/16 13:53	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>133 %</i>	<i>49 - 148</i>		B6C0498	03/18/2016	<i>03/18/16 13:53</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.6 %</i>	<i>65 - 132</i>		B6C0498	03/18/2016	<i>03/18/16 13:53</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>122 %</i>	<i>55 - 138</i>		B6C0498	03/18/2016	<i>03/18/16 13:53</i>	
<i>Surrogate: Toluene-d8</i>	<i>105 %</i>	<i>60 - 120</i>		B6C0498	03/18/2016	<i>03/18/16 13:53</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID EW-02

Lab ID: 1601035-06

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	11	2.0	1	B6C0513	03/18/2016	03/18/16 15:29	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	69.4 %	42 - 106		B6C0513	03/18/2016	03/18/16 15:29	
<i>Surrogate: 2-Fluorobiphenyl</i>	78.0 %	55 - 117		B6C0513	03/18/2016	03/18/16 15:29	
<i>Surrogate: 4-Terphenyl-d14</i>	87.9 %	52 - 142		B6C0513	03/18/2016	03/18/16 15:29	
<i>Surrogate: Nitrobenzene-d5</i>	74.0 %	43 - 116		B6C0513	03/18/2016	03/18/16 15:29	



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9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID MW-29

Lab ID: 1601035-07

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	B6C0498	03/18/2016	03/18/16 14:37	
1,1,1-Trichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,1,2-Trichloroethane	1.1	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,1-Dichloroethane	3.9	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,1-Dichloroethene	420	5.0	10	B6C0498	03/18/2016	03/18/16 14:59	D6
1,1-Dichloropropene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,2,3-Trichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,2,3-Trichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,2,4-Trichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,2,4-Trimethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,2-Dibromoethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,2-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,2-Dichloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,2-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,3,5-Trimethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,3-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,3-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
1,4-Dichlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
2,2-Dichloropropane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
2-Chlorotoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
4-Chlorotoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
4-Isopropyltoluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Benzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Bromobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Bromodichloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Bromoform	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Bromomethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Carbon tetrachloride	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Chlorobenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Chloroethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Chloroform	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Chloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
cis-1,2-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
cis-1,3-Dichloropropene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Dibromochloromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main GETS Mid Monthly Sam

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 03/24/2016

Client Sample ID MW-29

Lab ID: 1601035-07

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	B6C0498	03/18/2016	03/18/16 14:37	
Dichlorodifluoromethane	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Ethylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Hexachlorobutadiene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Isopropylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
m,p-Xylene	ND	1.0	1	B6C0498	03/18/2016	03/18/16 14:37	
Methylene chloride	ND	1.0	1	B6C0498	03/18/2016	03/18/16 14:37	
n-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
n-Propylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Naphthalene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
o-Xylene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
sec-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Styrene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
tert-Butylbenzene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Tetrachloroethene	1.0	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Toluene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
trans-1,2-Dichloroethene	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Trichloroethene	2.7	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Trichlorofluoromethane	1.4	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
Vinyl chloride	ND	0.50	1	B6C0498	03/18/2016	03/18/16 14:37	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>135 %</i>	<i>49 - 148</i>		B6C0498	03/18/2016	<i>03/18/16 14:59</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>131 %</i>	<i>49 - 148</i>		B6C0498	03/18/2016	<i>03/18/16 14:37</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>100 %</i>	<i>65 - 132</i>		B6C0498	03/18/2016	<i>03/18/16 14:59</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.8 %</i>	<i>65 - 132</i>		B6C0498	03/18/2016	<i>03/18/16 14:37</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>118 %</i>	<i>55 - 138</i>		B6C0498	03/18/2016	<i>03/18/16 14:59</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>119 %</i>	<i>55 - 138</i>		B6C0498	03/18/2016	<i>03/18/16 14:37</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>60 - 120</i>		B6C0498	03/18/2016	<i>03/18/16 14:37</i>	
<i>Surrogate: Toluene-d8</i>	<i>106 %</i>	<i>60 - 120</i>		B6C0498	03/18/2016	<i>03/18/16 14:59</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 03/24/2016

Client Sample ID MW-29

Lab ID: 1601035-07

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	140	2.0	1	B6C0513	03/18/2016	03/18/16 15:57	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>69.0 %</i>	<i>42 - 106</i>		B6C0513	03/18/2016	<i>03/18/16 15:57</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>76.8 %</i>	<i>55 - 117</i>		B6C0513	03/18/2016	<i>03/18/16 15:57</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>87.2 %</i>	<i>52 - 142</i>		B6C0513	03/18/2016	<i>03/18/16 15:57</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>73.0 %</i>	<i>43 - 116</i>		B6C0513	03/18/2016	<i>03/18/16 15:57</i>	



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Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 03/24/2016

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
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Batch B6C0498 - MSVOA_LL_W

Blank (B6C0498-BLK1)

Prepared: 3/18/2016 Analyzed: 3/18/2016

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 GETS Mid Monthly Sampl

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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
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Batch B6C0498 - MSVOA_LL_W (continued)

Blank (B6C0498-BLK1) - Continued

Prepared: 3/18/2016 Analyzed: 3/18/2016

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			
<hr/>									
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>28.89</i>		<i>25.0000</i>			<i>116</i>		<i>49 - 148</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.99</i>		<i>25.0000</i>			<i>100</i>		<i>65 - 132</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>28.21</i>		<i>25.0000</i>			<i>113</i>		<i>55 - 138</i>	
<i>Surrogate: Toluene-d8</i>	<i>25.65</i>		<i>25.0000</i>			<i>103</i>		<i>60 - 120</i>	

LCS (B6C0498-BS1)

Prepared: 3/18/2016 Analyzed: 3/18/2016

1,1,1,2-Tetrachloroethane	20.6900	0.50	20.0000			103		71 - 142	
1,1,1-Trichloroethane	23.0300	0.50	20.0000			115		68 - 141	
1,1,2,2-Tetrachloroethane	16.7200	0.50	20.0000			83.6		72 - 123	
1,1,2-Trichloroethane	17.8400	0.50	20.0000			89.2		63 - 129	
1,1-Dichloroethane	20.0400	0.50	20.0000			100		65 - 133	
1,1-Dichloroethene	23.9900	0.50	20.0000			120		61 - 136	
1,1-Dichloropropene	22.8300	0.50	20.0000			114		62 - 137	
1,2,3-Trichloropropane	16.9600	0.50	20.0000			84.8		71 - 128	
1,2,3-Trichlorobenzene	18.7200	0.50	20.0000			93.6		47 - 187	
1,2,4-Trichlorobenzene	19.3100	0.50	20.0000			96.6		53 - 154	
1,2,4-Trimethylbenzene	19.9600	0.50	20.0000			99.8		80 - 139	
1,2-Dibromo-3-chloropropane	18.9400	0.50	20.0000			94.7		53 - 166	
1,2-Dibromoethane	18.2200	0.50	20.0000			91.1		58 - 134	
1,2-Dichlorobenzene	18.0000	0.50	20.0000			90.0		75 - 130	
1,2-Dichloroethane	19.0200	0.50	20.0000			95.1		71 - 131	
1,2-Dichloropropane	18.0600	0.50	20.0000			90.3		69 - 130	
1,3,5-Trimethylbenzene	20.1700	0.50	20.0000			101		80 - 139	



Certificate of Analysis

Hargis & Associates, Inc.

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Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 03/24/2016

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
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Batch B6C0498 - MSVOA_LL_W (continued)

LCS (B6C0498-BS1) - Continued

Prepared: 3/18/2016 Analyzed: 3/18/2016

1,3-Dichlorobenzene	18.5000	0.50	20.0000		92.5	76 - 129			
1,3-Dichloropropane	17.7600	0.50	20.0000		88.8	75 - 124			
1,4-Dichlorobenzene	17.7800	0.50	20.0000		88.9	76 - 123			
2,2-Dichloropropane	26.8800	0.50	20.0000		134	60 - 149			
2-Chlorotoluene	19.2300	0.50	20.0000		96.2	78 - 137			
4-Chlorotoluene	18.8500	0.50	20.0000		94.2	78 - 136			
4-Isopropyltoluene	21.3300	0.50	20.0000		107	75 - 146			
Benzene	39.7500	0.50	40.0000		99.4	72 - 127			
Bromobenzene	17.7600	0.50	20.0000		88.8	74 - 123			
Bromodichloromethane	19.2600	0.50	20.0000		96.3	74 - 130			
Bromoform	19.1500	0.50	20.0000		95.8	74 - 135			
Bromomethane	36.9100	0.50	20.0000		185	14 - 166			L4
Carbon tetrachloride	26.4500	0.50	20.0000		132	57 - 162			
Chlorobenzene	18.5900	0.50	20.0000		93.0	78 - 125			
Chloroethane	24.6400	0.50	20.0000		123	54 - 144			
Chloroform	20.3900	0.50	20.0000		102	66 - 132			
Chloromethane	19.7500	0.50	20.0000		98.8	31 - 128			
cis-1,2-Dichloroethene	21.6600	0.50	20.0000		108	68 - 124			
cis-1,3-Dichloropropene	21.3000	0.50	20.0000		106	63 - 139			
Dibromochloromethane	18.7400	0.50	20.0000		93.7	78 - 132			
Dibromomethane	17.9500	0.50	20.0000		89.8	76 - 122			
Dichlorodifluoromethane	26.6100	0.50	20.0000		133	17 - 171			
Ethylbenzene	39.4100	0.50	40.0000		98.5	71 - 142			
Hexachlorobutadiene	20.8300	0.50	20.0000		104	54 - 169			
Isopropylbenzene	22.3900	0.50	20.0000		112	76 - 146			
m,p-Xylene	41.1400	1.0	40.0000		103	75 - 150			
Methylene chloride	18.4600	1.0	20.0000		92.3	66 - 130			
n-Butylbenzene	22.1900	0.50	20.0000		111	76 - 151			
n-Propylbenzene	20.9200	0.50	20.0000		105	76 - 147			
Naphthalene	18.2300	0.50	20.0000		91.2	36 - 180			
o-Xylene	40.0800	0.50	40.0000		100	75 - 143			
sec-Butylbenzene	21.6300	0.50	20.0000		108	77 - 147			
Styrene	19.1200	0.50	20.0000		95.6	75 - 133			
tert-Butylbenzene	21.0300	0.50	20.0000		105	75 - 143			
Tetrachloroethene	21.1000	0.50	20.0000		106	58 - 139			
Toluene	39.1000	0.50	40.0000		97.8	59 - 140			
trans-1,2-Dichloroethene	21.7400	0.50	20.0000		109	63 - 128			
Trichloroethene	21.5500	0.50	20.0000		108	67 - 130			
Trichlorofluoromethane	25.6100	0.50	20.0000		128	56 - 168			
Vinyl chloride	24.0800	0.50	20.0000		120	49 - 146			
Surrogate: 1,2-Dichloroethane-d4	23.99		25.0000		96.0	49 - 148			



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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 Limit	Notes
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Batch B6C0498 - MSVOA_LL_W (continued)

LCS (B6C0498-BS1) - Continued

Prepared: 3/18/2016 Analyzed: 3/18/2016

Surrogate: 4-Bromofluorobenzene	22.47		25.0000	89.9	65 - 132
Surrogate: Dibromofluoromethane	23.94		25.0000	95.8	55 - 138
Surrogate: Toluene-d8	23.37		25.0000	93.5	60 - 120

LCS Dup (B6C0498-BS1)

Prepared: 3/18/2016 Analyzed: 3/18/2016

1,1,1,2-Tetrachloroethane	18.9300	0.50	20.0000	94.6	71 - 142	8.88	20
1,1,1-Trichloroethane	21.7400	0.50	20.0000	109	68 - 141	5.76	20
1,1,2,2-Tetrachloroethane	16.4000	0.50	20.0000	82.0	72 - 123	1.93	20
1,1,2-Trichloroethane	17.7500	0.50	20.0000	88.8	63 - 129	0.506	20
1,1-Dichloroethane	18.5200	0.50	20.0000	92.6	65 - 133	7.88	20
1,1-Dichloroethene	21.4300	0.50	20.0000	107	61 - 136	11.3	20
1,1-Dichloropropene	20.9200	0.50	20.0000	105	62 - 137	8.73	20
1,2,3-Trichloropropane	16.7200	0.50	20.0000	83.6	71 - 128	1.43	20
1,2,3-Trichlorobenzene	17.3800	0.50	20.0000	86.9	47 - 187	7.42	20
1,2,4-Trichlorobenzene	17.6700	0.50	20.0000	88.4	53 - 154	8.87	20
1,2,4-Trimethylbenzene	18.4600	0.50	20.0000	92.3	80 - 139	7.81	20
1,2-Dibromo-3-chloropropane	18.3800	0.50	20.0000	91.9	53 - 166	3.00	20
1,2-Dibromoethane	18.4900	0.50	20.0000	92.4	58 - 134	1.47	20
1,2-Dichlorobenzene	16.8200	0.50	20.0000	84.1	75 - 130	6.78	20
1,2-Dichloroethane	18.3100	0.50	20.0000	91.6	71 - 131	3.80	20
1,2-Dichloropropane	17.7100	0.50	20.0000	88.6	69 - 130	1.96	20
1,3,5-Trimethylbenzene	18.6000	0.50	20.0000	93.0	80 - 139	8.10	20
1,3-Dichlorobenzene	16.9100	0.50	20.0000	84.6	76 - 129	8.98	20
1,3-Dichloropropane	17.0500	0.50	20.0000	85.2	75 - 124	4.08	20
1,4-Dichlorobenzene	16.4800	0.50	20.0000	82.4	76 - 123	7.59	20
2,2-Dichloropropane	24.3900	0.50	20.0000	122	60 - 149	9.71	20
2-Chlorotoluene	17.8300	0.50	20.0000	89.2	78 - 137	7.56	20
4-Chlorotoluene	17.5500	0.50	20.0000	87.8	78 - 136	7.14	20
4-Isopropyltoluene	19.4800	0.50	20.0000	97.4	75 - 146	9.07	20
Benzene	37.4600	0.50	40.0000	93.6	72 - 127	5.93	20
Bromobenzene	16.8800	0.50	20.0000	84.4	74 - 123	5.08	20
Bromodichloromethane	18.2600	0.50	20.0000	91.3	74 - 130	5.33	20
Bromoform	19.0000	0.50	20.0000	95.0	74 - 135	0.786	20
Bromomethane	33.8900	0.50	20.0000	169	14 - 166	8.53	20 L4
Carbon tetrachloride	24.1000	0.50	20.0000	120	57 - 162	9.30	20
Chlorobenzene	17.3600	0.50	20.0000	86.8	78 - 125	6.84	20
Chloroethane	22.5400	0.50	20.0000	113	54 - 144	8.90	20
Chloroform	18.7300	0.50	20.0000	93.6	66 - 132	8.49	20
Chloromethane	18.2700	0.50	20.0000	91.4	31 - 128	7.79	20
cis-1,2-Dichloroethene	20.3600	0.50	20.0000	102	68 - 124	6.19	20
cis-1,3-Dichloropropene	20.4100	0.50	20.0000	102	63 - 139	4.27	20
Dibromochloromethane	18.0400	0.50	20.0000	90.2	78 - 132	3.81	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	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B6C0498 - MSVOA_LL_W (continued)

LCS Dup (B6C0498-BSD1) - Continued

Prepared: 3/18/2016 Analyzed: 3/18/2016

Dibromomethane	17.6400	0.50	20.0000		88.2	76 - 122	1.74	20	
Dichlorodifluoromethane	24.2400	0.50	20.0000		121	17 - 171	9.32	20	
Ethylbenzene	36.5000	0.50	40.0000		91.2	71 - 142	7.67	20	
Hexachlorobutadiene	18.5200	0.50	20.0000		92.6	54 - 169	11.7	20	
Isopropylbenzene	20.7800	0.50	20.0000		104	76 - 146	7.46	20	
m,p-Xylene	37.9700	1.0	40.0000		94.9	75 - 150	8.01	20	
Methylene chloride	17.4300	1.0	20.0000		87.2	66 - 130	5.74	20	
n-Butylbenzene	19.9100	0.50	20.0000		99.6	76 - 151	10.8	20	
n-Propylbenzene	19.1600	0.50	20.0000		95.8	76 - 147	8.78	20	
Naphthalene	17.7100	0.50	20.0000		88.6	36 - 180	2.89	20	
o-Xylene	37.3400	0.50	40.0000		93.4	75 - 143	7.08	20	
sec-Butylbenzene	19.8400	0.50	20.0000		99.2	77 - 147	8.63	20	
Styrene	17.8600	0.50	20.0000		89.3	75 - 133	6.81	20	
tert-Butylbenzene	19.2100	0.50	20.0000		96.0	75 - 143	9.05	20	
Tetrachloroethene	18.8600	0.50	20.0000		94.3	58 - 139	11.2	20	
Toluene	37.0200	0.50	40.0000		92.6	59 - 140	5.47	20	
trans-1,2-Dichloroethene	19.9000	0.50	20.0000		99.5	63 - 128	8.84	20	
Trichloroethene	19.9600	0.50	20.0000		99.8	67 - 130	7.66	20	
Trichlorofluoromethane	23.6000	0.50	20.0000		118	56 - 168	8.17	20	
Vinyl chloride	22.0700	0.50	20.0000		110	49 - 146	8.71	20	
<hr/>									
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>26.77</i>		<i>25.0000</i>		<i>107</i>	<i>49 - 148</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.83</i>		<i>25.0000</i>		<i>99.3</i>	<i>65 - 132</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>26.38</i>		<i>25.0000</i>		<i>106</i>	<i>55 - 138</i>			
<i>Surrogate: Toluene-d8</i>	<i>26.39</i>		<i>25.0000</i>		<i>106</i>	<i>60 - 120</i>			

Duplicate (B6C0498-DUP1)

Source: 1601000-01

Prepared: 3/18/2016 Analyzed: 3/18/2016

1,1,1,2-Tetrachloroethane	ND	0.50		ND	NR			20	
1,1,1-Trichloroethane	ND	0.50		ND	NR			20	
1,1,2,2-Tetrachloroethane	ND	0.50		ND	NR			20	
1,1,2-Trichloroethane	ND	0.50		ND	NR			20	
1,1-Dichloroethane	ND	0.50		ND	NR			20	
1,1-Dichloroethene	ND	0.50		ND	NR			20	
1,1-Dichloropropene	ND	0.50		ND	NR			20	
1,2,3-Trichloropropane	ND	0.50		ND	NR			20	
1,2,3-Trichlorobenzene	ND	0.50		ND	NR			20	
1,2,4-Trichlorobenzene	ND	0.50		ND	NR			20	
1,2,4-Trimethylbenzene	ND	0.50		ND	NR			20	
1,2-Dibromo-3-chloropropane	ND	0.50		ND	NR			20	
1,2-Dibromoethane	ND	0.50		ND	NR			20	
1,2-Dichlorobenzene	ND	0.50		ND	NR			20	
1,2-Dichloroethane	0.630000	0.50		0.640000	NR		1.57	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 Limits	RPD RPD	RPD Limit	Notes
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Batch B6C0498 - MSVOA_LL_W (continued)

Duplicate (B6C0498-DUP1) - Continued

Source: 1601000-01

Prepared: 3/18/2016 Analyzed: 3/18/2016

1,2-Dichloropropane	ND	0.50		ND	NR			20	
1,3,5-Trimethylbenzene	ND	0.50		ND	NR			20	
1,3-Dichlorobenzene	ND	0.50		ND	NR			20	
1,3-Dichloropropane	ND	0.50		ND	NR			20	
1,4-Dichlorobenzene	ND	0.50		ND	NR			20	
2,2-Dichloropropane	ND	0.50		ND	NR			20	
2-Chlorotoluene	ND	0.50		ND	NR			20	
4-Chlorotoluene	ND	0.50		ND	NR			20	
4-Isopropyltoluene	ND	0.50		ND	NR			20	
Benzene	2.28000	0.50		2.39000	NR		4.71	20	
Bromobenzene	ND	0.50		ND	NR			20	
Bromodichloromethane	ND	0.50		ND	NR			20	
Bromoform	ND	0.50		ND	NR			20	
Bromomethane	ND	0.50		ND	NR			20	
Carbon tetrachloride	ND	0.50		ND	NR			20	
Chlorobenzene	ND	0.50		ND	NR			20	
Chloroethane	ND	0.50		ND	NR			20	
Chloroform	ND	0.50		ND	NR			20	
Chloromethane	ND	0.50		ND	NR			20	
cis-1,2-Dichloroethene	ND	0.50		ND	NR			20	
cis-1,3-Dichloropropene	ND	0.50		ND	NR			20	
Dibromochloromethane	ND	0.50		ND	NR			20	
Dibromomethane	ND	0.50		ND	NR			20	
Dichlorodifluoromethane	ND	0.50		ND	NR			20	
Ethylbenzene	ND	0.50		ND	NR			20	
Hexachlorobutadiene	ND	0.50		ND	NR			20	
Isopropylbenzene	0.980000	0.50		1.07000	NR		8.78	20	
m,p-Xylene	ND	1.0		ND	NR			20	
Methylene chloride	ND	1.0		ND	NR			20	
n-Butylbenzene	ND	0.50		ND	NR			20	
n-Propylbenzene	ND	0.50		ND	NR			20	
Naphthalene	0.360000	0.50		0.380000	NR		5.41	20	
o-Xylene	ND	0.50		ND	NR			20	
sec-Butylbenzene	ND	0.50		ND	NR			20	
Styrene	ND	0.50		ND	NR			20	
tert-Butylbenzene	ND	0.50		ND	NR			20	
Tetrachloroethene	ND	0.50		ND	NR			20	
Toluene	ND	0.50		ND	NR			20	
trans-1,2-Dichloroethene	ND	0.50		ND	NR			20	
Trichloroethene	ND	0.50		ND	NR			20	
Trichlorofluoromethane	ND	0.50		ND	NR			20	
Vinyl chloride	ND	0.50		ND	NR			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
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Batch B6C0498 - MSVOA_LL_W (continued)

Duplicate (B6C0498-DUP1) - Continued

Source: 1601000-01

Prepared: 3/18/2016 Analyzed: 3/18/2016

Surrogate: 1,2-Dichloroethane-d4	31.89		25.0000		128	49 - 148			
Surrogate: 4-Bromofluorobenzene	25.46		25.0000		102	65 - 132			
Surrogate: Dibromofluoromethane	28.85		25.0000		115	55 - 138			
Surrogate: Toluene-d8	26.44		25.0000		106	60 - 120			



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

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B6C0513 - MSSEMI_W

Blank (B6C0513-BLK1)

Prepared: 3/18/2016 Analyzed: 3/18/2016

1,4-Dioxane	ND	2.0		NR					
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	60.76		100.000	60.8	42 - 106				
<i>Surrogate: 2-Fluorobiphenyl</i>	72.01		100.000	72.0	55 - 117				
<i>Surrogate: 4-Terphenyl-d14</i>	88.31		100.000	88.3	52 - 142				
<i>Surrogate: Nitrobenzene-d5</i>	63.09		100.000	63.1	43 - 116				

LCS (B6C0513-BS1)

Prepared: 3/18/2016 Analyzed: 3/18/2016

1,4-Dioxane	107.630	2.0	100.000	108	62 - 127				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	61.11		100.000	61.1	42 - 106				
<i>Surrogate: 2-Fluorobiphenyl</i>	77.57		100.000	77.6	55 - 117				
<i>Surrogate: 4-Terphenyl-d14</i>	86.89		100.000	86.9	52 - 142				
<i>Surrogate: Nitrobenzene-d5</i>	74.91		100.000	74.9	43 - 116				

LCS Dup (B6C0513-BSD1)

Prepared: 3/18/2016 Analyzed: 3/18/2016

1,4-Dioxane	108.580	2.0	100.000	109	62 - 127	0.879	20		
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	66.02		100.000	66.0	42 - 106				
<i>Surrogate: 2-Fluorobiphenyl</i>	81.74		100.000	81.7	55 - 117				
<i>Surrogate: 4-Terphenyl-d14</i>	87.91		100.000	87.9	52 - 142				
<i>Surrogate: Nitrobenzene-d5</i>	82.12		100.000	82.1	43 - 116				



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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	RPD Limit	Notes
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Batch B6C0601 - MSSEMI_W

Blank (B6C0601-BLK1)

Prepared: 3/22/2016 Analyzed: 3/22/2016

1,4-Dioxane	ND	0.20			NR				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.5528		1.00000		55.3	33 - 98			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.5887		1.00000		58.9	35 - 110			
<i>Surrogate: 4-Terphenyl-d14</i>	0.9420		1.00000		94.2	37 - 158			
<i>Surrogate: Nitrobenzene-d5</i>	0.3392		1.00000		33.9	21 - 121			

LCS (B6C0601-BS1)

Prepared: 3/22/2016 Analyzed: 3/22/2016

1,4-Dioxane	0.963500	0.20	1.00000		96.4	58 - 151			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.6475		1.00000		64.7	33 - 98			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.7076		1.00000		70.8	35 - 110			
<i>Surrogate: 4-Terphenyl-d14</i>	0.8429		1.00000		84.3	37 - 158			
<i>Surrogate: Nitrobenzene-d5</i>	0.4202		1.00000		42.0	21 - 121			

LCS Dup (B6C0601-BSD1)

Prepared: 3/22/2016 Analyzed: 3/22/2016

1,4-Dioxane	1.03403	0.20	1.00000		103	58 - 151	7.06	20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.6521		1.00000		65.2	33 - 98			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.7068		1.00000		70.7	35 - 110			
<i>Surrogate: 4-Terphenyl-d14</i>	0.8680		1.00000		86.8	37 - 158			
<i>Surrogate: Nitrobenzene-d5</i>	0.4040		1.00000		40.4	21 - 121			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 03/24/2016

Notes and Definitions

L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
D6	Sample required dilution due to high concentration of target analyte.
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.

April 21, 2016

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 : 1601225
Client Reference : Raytheon Main GETS Monthly Sample, 532.15

Enclosed are the results for sample(s) received on April 05, 2016 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,



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 GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-040516	1601225-01	Lab prepared water	4/05/16 7:00	4/05/16 10:15
CEFF	1601225-02	Groundwater	4/05/16 7:55	4/05/16 10:15
CBT	1601225-03	Groundwater	4/05/16 8:05	4/05/16 10:15
POX	1601225-04	Groundwater	4/05/16 8:10	4/05/16 10:15
PF	1601225-05	Groundwater	4/05/16 8:20	4/05/16 10:15
INF	1601225-06	Groundwater	4/05/16 8:30	4/05/16 10:15
EW-02	1601225-07	Groundwater	4/05/16 8:58	4/05/16 10:15
MW-29	1601225-08	Groundwater	4/05/16 9:18	4/05/16 10:15

CASE NARRATIVE

The sample for EPA 317 (Bromate) analysis was subcontracted to Exova, Inc. with ELAP Cert.# 2652.

Sample Receiving/General Comments:

The following analytes lists were taken from sample containers: Alkalinity - Hydroxide, Bicarbonate, Carbonate, and Total.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID TB-040516

Lab ID: 1601225-01

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,1,1-Trichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,1,2-Trichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,1-Dichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,1-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,1-Dichloropropene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,2,3-Trichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,2,3-Trichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,2,4-Trichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,2,4-Trimethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,2-Dibromoethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,2-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,2-Dichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,2-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,3,5-Trimethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,3-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,3-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
1,4-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
2,2-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
2-Chlorotoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
4-Chlorotoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
4-Isopropyltoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Benzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Bromobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Bromodichloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Bromoform	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Bromomethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Carbon tetrachloride	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Chlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Chloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Chloroform	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Chloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
cis-1,2-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
cis-1,3-Dichloropropene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Dibromochloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID TB-040516

Lab ID: 1601225-01

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Dichlorodifluoromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Ethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Hexachlorobutadiene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Isopropylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
m,p-Xylene	ND	1.0	1	B6D0140	04/07/2016	04/07/16 16:59	
Methylene chloride	ND	1.0	1	B6D0140	04/07/2016	04/07/16 16:59	
n-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
n-Propylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Naphthalene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
o-Xylene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
sec-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Styrene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
tert-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Tetrachloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Toluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
trans-1,2-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Trichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Trichlorofluoromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
Vinyl chloride	ND	0.50	1	B6D0140	04/07/2016	04/07/16 16:59	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>100 %</i>	<i>51 - 157</i>		B6D0140	04/07/2016	<i>04/07/16 16:59</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.6 %</i>	<i>61 - 123</i>		B6D0140	04/07/2016	<i>04/07/16 16:59</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>100 %</i>	<i>57 - 147</i>		B6D0140	04/07/2016	<i>04/07/16 16:59</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.5 %</i>	<i>61 - 119</i>		B6D0140	04/07/2016	<i>04/07/16 16:59</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID CEFF

Lab ID: 1601225-02

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,1,1-Trichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,1,2-Trichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,1-Dichloroethane	0.62	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,1-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,1-Dichloropropene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,2,3-Trichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,2,3-Trichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,2,4-Trichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,2,4-Trimethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,2-Dibromoethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,2-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,2-Dichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,2-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,3,5-Trimethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,3-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,3-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
1,4-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
2,2-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
2-Chlorotoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
4-Chlorotoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
4-Isopropyltoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Benzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Bromobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Bromodichloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Bromoform	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Bromomethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Carbon tetrachloride	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Chlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Chloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Chloroform	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Chloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
cis-1,2-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
cis-1,3-Dichloropropene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Dibromochloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID CEFF

Lab ID: 1601225-02

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Dichlorodifluoromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Ethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Hexachlorobutadiene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Isopropylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
m,p-Xylene	ND	1.0	1	B6D0140	04/07/2016	04/07/16 17:21	
Methylene chloride	ND	1.0	1	B6D0140	04/07/2016	04/07/16 17:21	
n-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
n-Propylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Naphthalene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
o-Xylene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
sec-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Styrene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
tert-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Tetrachloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Toluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
trans-1,2-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Trichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Trichlorofluoromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
Vinyl chloride	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:21	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>104 %</i>	<i>51 - 157</i>		B6D0140	04/07/2016	<i>04/07/16 17:21</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.3 %</i>	<i>61 - 123</i>		B6D0140	04/07/2016	<i>04/07/16 17:21</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>57 - 147</i>		B6D0140	04/07/2016	<i>04/07/16 17:21</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>61 - 119</i>		B6D0140	04/07/2016	<i>04/07/16 17:21</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID CEFF

Lab ID: 1601225-02

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6D0132	04/06/2016	04/07/16 15:20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	78.3 %	31 - 106		B6D0132	04/06/2016	04/07/16 15:20	
<i>Surrogate: 2-Fluorobiphenyl</i>	82.0 %	28 - 122		B6D0132	04/06/2016	04/07/16 15:20	
<i>Surrogate: 4-Terphenyl-d14</i>	82.4 %	43 - 131		B6D0132	04/06/2016	04/07/16 15:20	
<i>Surrogate: Nitrobenzene-d5</i>	79.2 %	20 - 119		B6D0132	04/06/2016	04/07/16 15:20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID CBT

Lab ID: 1601225-03

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,1,1-Trichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,1,2-Trichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,1-Dichloroethane	0.62	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,1-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,1-Dichloropropene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,2,3-Trichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,2,3-Trichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,2,4-Trichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,2,4-Trimethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,2-Dibromoethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,2-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,2-Dichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,2-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,3,5-Trimethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,3-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,3-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
1,4-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
2,2-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
2-Chlorotoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
4-Chlorotoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
4-Isopropyltoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Benzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Bromobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Bromodichloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Bromoform	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Bromomethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Carbon tetrachloride	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Chlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Chloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Chloroform	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Chloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
cis-1,2-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
cis-1,3-Dichloropropene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Dibromochloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID CBT

Lab ID: 1601225-03

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Dichlorodifluoromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Ethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Hexachlorobutadiene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Isopropylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
m,p-Xylene	ND	1.0	1	B6D0140	04/07/2016	04/07/16 17:43	
Methylene chloride	ND	1.0	1	B6D0140	04/07/2016	04/07/16 17:43	
n-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
n-Propylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Naphthalene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
o-Xylene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
sec-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Styrene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
tert-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Tetrachloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Toluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
trans-1,2-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Trichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Trichlorofluoromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
Vinyl chloride	ND	0.50	1	B6D0140	04/07/2016	04/07/16 17:43	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>109 %</i>	<i>51 - 157</i>		B6D0140	04/07/2016	<i>04/07/16 17:43</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.1 %</i>	<i>61 - 123</i>		B6D0140	04/07/2016	<i>04/07/16 17:43</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>	<i>57 - 147</i>		B6D0140	04/07/2016	<i>04/07/16 17:43</i>	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>61 - 119</i>		B6D0140	04/07/2016	<i>04/07/16 17:43</i>	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID POX

Lab ID: 1601225-04

Alkalinity, Speciated by SM 2320B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO ₃)	240	5.0	1	B6D0220	04/11/2016	04/11/16 11:44	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B6D0220	04/11/2016	04/11/16 11:44	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B6D0220	04/11/2016	04/11/16 11:44	
Alkalinity, Total (as CaCO ₃)	240	5.0	1	B6D0220	04/11/2016	04/11/16 11:44	

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	ND	3.0	1	B6D0143	04/06/2016	04/06/16 15:30	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,1,1-Trichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,1,2-Trichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,1-Dichloroethane	0.65	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,1-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,1-Dichloropropene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,2,3-Trichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,2,3-Trichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,2,4-Trichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,2,4-Trimethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,2-Dibromoethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,2-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,2-Dichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,2-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,3,5-Trimethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,3-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,3-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
1,4-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
2,2-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
2-Chlorotoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID POX

Lab ID: 1601225-04

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
4-Isopropyltoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Benzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Bromobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Bromodichloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Bromoform	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Bromomethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Carbon tetrachloride	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Chlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Chloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Chloroform	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Chloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
cis-1,2-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
cis-1,3-Dichloropropene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Dibromochloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Dibromomethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Dichlorodifluoromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Ethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Hexachlorobutadiene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Isopropylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
m,p-Xylene	ND	1.0	1	B6D0140	04/07/2016	04/07/16 18:04	
Methylene chloride	ND	1.0	1	B6D0140	04/07/2016	04/07/16 18:04	
n-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
n-Propylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Naphthalene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
o-Xylene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
sec-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Styrene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
tert-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Tetrachloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Toluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
trans-1,2-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Trichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Trichlorofluoromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Vinyl chloride	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:04	
Surrogate: 1,2-Dichloroethane-d4	110 %	51 - 157		B6D0140	04/07/2016	04/07/16 18:04	
Surrogate: 4-Bromofluorobenzene	96.2 %	61 - 123		B6D0140	04/07/2016	04/07/16 18:04	



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9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID POX

Lab ID: 1601225-04

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: Dibromofluoromethane	109 %	57 - 147		B6D0140	04/07/2016	04/07/16 18:04	
Surrogate: Toluene-d8	105 %	61 - 119		B6D0140	04/07/2016	04/07/16 18:04	

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6D0132	04/06/2016	04/07/16 15:48	
Surrogate: 1,2-Dichlorobenzene-d4	63.8 %	31 - 106		B6D0132	04/06/2016	04/07/16 15:48	
Surrogate: 2-Fluorobiphenyl	69.2 %	28 - 122		B6D0132	04/06/2016	04/07/16 15:48	
Surrogate: 4-Terphenyl-d14	70.2 %	43 - 131		B6D0132	04/06/2016	04/07/16 15:48	
Surrogate: Nitrobenzene-d5	63.7 %	20 - 119		B6D0132	04/06/2016	04/07/16 15:48	



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 San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5
 Report To : Steve Netto
 Reported : 04/21/2016

Client Sample ID PF
Lab ID: 1601225-05

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	B6D0099	04/06/2016	04/06/16 08:35	

Alkalinity, Speciated by SM 2320B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO3)	230	5.0	1	B6D0220	04/11/2016	04/11/16 11:44	
Alkalinity, Carbonate (as CaCO3)	ND	5.0	1	B6D0220	04/11/2016	04/11/16 11:44	
Alkalinity, Hydroxide (as CaCO3)	ND	5.0	1	B6D0220	04/11/2016	04/11/16 11:44	
Alkalinity, Total (as CaCO3)	230	5.0	1	B6D0220	04/11/2016	04/11/16 11:44	

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	ND	1.0	1	B6D0189	04/08/2016	04/08/16 09:12	

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	ND	3.0	1	B6D0143	04/06/2016	04/06/16 15:49	



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San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID INF

Lab ID: 1601225-06

Bromide by Ion Chromatography EPA 300

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.28	0.05	1	B6D0153	04/06/2016	04/06/16 11:09	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,1,1-Trichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,1,2-Trichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,1-Dichloroethane	1.2	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,1-Dichloroethene	98	2.5	5	B6D0140	04/07/2016	04/07/16 20:39	
1,1-Dichloropropene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,2,3-Trichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,2,3-Trichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,2,4-Trichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,2,4-Trimethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,2-Dibromoethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,2-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,2-Dichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,2-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,3,5-Trimethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,3-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,3-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
1,4-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
2,2-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
2-Chlorotoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
4-Chlorotoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
4-Isopropyltoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Benzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Bromobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Bromodichloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Bromoform	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Bromomethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Carbon tetrachloride	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Chlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	



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9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID INF

Lab ID: 1601225-06

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Chloroform	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Chloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
cis-1,2-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
cis-1,3-Dichloropropene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Dibromochloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Dibromomethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Dichlorodifluoromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Ethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Hexachlorobutadiene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Isopropylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
m,p-Xylene	ND	1.0	1	B6D0140	04/07/2016	04/07/16 18:27	
Methylene chloride	ND	1.0	1	B6D0140	04/07/2016	04/07/16 18:27	
n-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
n-Propylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Naphthalene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
o-Xylene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
sec-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Styrene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
tert-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Tetrachloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Toluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
trans-1,2-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Trichloroethene	0.64	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Trichlorofluoromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
Vinyl chloride	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:27	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>112 %</i>	<i>51 - 157</i>		B6D0140	04/07/2016	<i>04/07/16 20:39</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.1 %</i>	<i>51 - 157</i>		B6D0140	04/07/2016	<i>04/07/16 18:27</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.1 %</i>	<i>61 - 123</i>		B6D0140	04/07/2016	<i>04/07/16 20:39</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>81.9 %</i>	<i>61 - 123</i>		B6D0140	04/07/2016	<i>04/07/16 18:27</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>94.0 %</i>	<i>57 - 147</i>		B6D0140	04/07/2016	<i>04/07/16 18:27</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>111 %</i>	<i>57 - 147</i>		B6D0140	04/07/2016	<i>04/07/16 20:39</i>	
<i>Surrogate: Toluene-d8</i>	<i>90.1 %</i>	<i>61 - 119</i>		B6D0140	04/07/2016	<i>04/07/16 18:27</i>	
<i>Surrogate: Toluene-d8</i>	<i>106 %</i>	<i>61 - 119</i>		B6D0140	04/07/2016	<i>04/07/16 20:39</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID INF

Lab ID: 1601225-06

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	27	2.0	1	B6D0155	04/07/2016	04/07/16 14:43	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>61.2 %</i>	<i>42 - 106</i>		<i>B6D0155</i>	<i>04/07/2016</i>	<i>04/07/16 14:43</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>77.5 %</i>	<i>55 - 117</i>		<i>B6D0155</i>	<i>04/07/2016</i>	<i>04/07/16 14:43</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>94.9 %</i>	<i>52 - 142</i>		<i>B6D0155</i>	<i>04/07/2016</i>	<i>04/07/16 14:43</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>70.1 %</i>	<i>43 - 116</i>		<i>B6D0155</i>	<i>04/07/2016</i>	<i>04/07/16 14:43</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID EW-02

Lab ID: 1601225-07

Bromide by Ion Chromatography EPA 300

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.23	0.05	1	B6D0153	04/06/2016	04/06/16 11:20	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,1,1-Trichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,1,2-Trichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,1-Dichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,1-Dichloroethene	35	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,1-Dichloropropene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,2,3-Trichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,2,3-Trichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,2,4-Trichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,2,4-Trimethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,2-Dibromoethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,2-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,2-Dichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,2-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,3,5-Trimethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,3-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,3-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
1,4-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
2,2-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
2-Chlorotoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
4-Chlorotoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
4-Isopropyltoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Benzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Bromobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Bromodichloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Bromoform	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Bromomethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Carbon tetrachloride	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Chlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID EW-02

Lab ID: 1601225-07

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Chloroform	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Chloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
cis-1,2-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
cis-1,3-Dichloropropene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Dibromochloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Dibromomethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Dichlorodifluoromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Ethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Hexachlorobutadiene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Isopropylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
m,p-Xylene	ND	1.0	1	B6D0140	04/07/2016	04/07/16 18:49	
Methylene chloride	ND	1.0	1	B6D0140	04/07/2016	04/07/16 18:49	
n-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
n-Propylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Naphthalene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
o-Xylene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
sec-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Styrene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
tert-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Tetrachloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Toluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
trans-1,2-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Trichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Trichlorofluoromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
Vinyl chloride	ND	0.50	1	B6D0140	04/07/2016	04/07/16 18:49	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>106 %</i>	<i>51 - 157</i>		B6D0140	04/07/2016	<i>04/07/16 18:49</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.7 %</i>	<i>61 - 123</i>		B6D0140	04/07/2016	<i>04/07/16 18:49</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>57 - 147</i>		B6D0140	04/07/2016	<i>04/07/16 18:49</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6D0140	04/07/2016	<i>04/07/16 18:49</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID EW-02

Lab ID: 1601225-07

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	7.2	2.0	1	B6D0155	04/07/2016	04/07/16 15:11	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>61.4 %</i>	<i>42 - 106</i>		<i>B6D0155</i>	<i>04/07/2016</i>	<i>04/07/16 15:11</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>72.5 %</i>	<i>55 - 117</i>		<i>B6D0155</i>	<i>04/07/2016</i>	<i>04/07/16 15:11</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>90.6 %</i>	<i>52 - 142</i>		<i>B6D0155</i>	<i>04/07/2016</i>	<i>04/07/16 15:11</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>68.1 %</i>	<i>43 - 116</i>		<i>B6D0155</i>	<i>04/07/2016</i>	<i>04/07/16 15:11</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID MW-29

Lab ID: 1601225-08

Bromide by Ion Chromatography EPA 300

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.48	0.05	1	B6D0153	04/06/2016	04/06/16 11:32	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,1,1-Trichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,1,2-Trichloroethane	1.1	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,1-Dichloroethane	3.9	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,1-Dichloroethene	330	5.0	10	B6D0140	04/07/2016	04/07/16 21:01	
1,1-Dichloropropene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,2,3-Trichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,2,3-Trichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,2,4-Trichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,2,4-Trimethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,2-Dibromoethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,2-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,2-Dichloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,2-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,3,5-Trimethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,3-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,3-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
1,4-Dichlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
2,2-Dichloropropane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
2-Chlorotoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
4-Chlorotoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
4-Isopropyltoluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Benzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Bromobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Bromodichloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Bromoform	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Bromomethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Carbon tetrachloride	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Chlorobenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID MW-29

Lab ID: 1601225-08

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Chloroform	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Chloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
cis-1,2-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
cis-1,3-Dichloropropene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Dibromochloromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Dibromomethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Dichlorodifluoromethane	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Ethylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Hexachlorobutadiene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Isopropylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
m,p-Xylene	ND	1.0	1	B6D0140	04/07/2016	04/07/16 19:11	
Methylene chloride	ND	1.0	1	B6D0140	04/07/2016	04/07/16 19:11	
n-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
n-Propylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Naphthalene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
o-Xylene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
sec-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Styrene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
tert-Butylbenzene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Tetrachloroethene	0.90	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Toluene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
trans-1,2-Dichloroethene	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Trichloroethene	2.5	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Trichlorofluoromethane	1.2	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
Vinyl chloride	ND	0.50	1	B6D0140	04/07/2016	04/07/16 19:11	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>110 %</i>	<i>51 - 157</i>		B6D0140	04/07/2016	<i>04/07/16 21:01</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>	<i>51 - 157</i>		B6D0140	04/07/2016	<i>04/07/16 19:11</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.6 %</i>	<i>61 - 123</i>		B6D0140	04/07/2016	<i>04/07/16 21:01</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.7 %</i>	<i>61 - 123</i>		B6D0140	04/07/2016	<i>04/07/16 19:11</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>	<i>57 - 147</i>		B6D0140	04/07/2016	<i>04/07/16 21:01</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>57 - 147</i>		B6D0140	04/07/2016	<i>04/07/16 19:11</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>61 - 119</i>		B6D0140	04/07/2016	<i>04/07/16 21:01</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6D0140	04/07/2016	<i>04/07/16 19:11</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Client Sample ID MW-29

Lab ID: 1601225-08

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	91	2.0	1	B6D0155	04/07/2016	04/07/16 15:38	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>61.4 %</i>	<i>42 - 106</i>		B6D0155	04/07/2016	<i>04/07/16 15:38</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>74.6 %</i>	<i>55 - 117</i>		B6D0155	04/07/2016	<i>04/07/16 15:38</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>90.5 %</i>	<i>52 - 142</i>		B6D0155	04/07/2016	<i>04/07/16 15:38</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>69.3 %</i>	<i>43 - 116</i>		B6D0155	04/07/2016	<i>04/07/16 15:38</i>	



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QUALITY CONTROL SECTION

Alkalinity, Speciated by SM 2320B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B6D0220 - No_Prep_WC1_W

Blank (B6D0220-BLK1)

Prepared: 4/11/2016 Analyzed: 4/11/2016

Alkalinity, Bicarbonate (as CaCO3)	ND	5.0			NR				
Alkalinity, Carbonate (as CaCO3)	ND	5.0			NR				
Alkalinity, Hydroxide (as CaCO3)	ND	5.0			NR				
Alkalinity, Total (as CaCO3)	ND	5.0			NR				

LCS (B6D0220-BS1)

Prepared: 4/11/2016 Analyzed: 4/11/2016

Alkalinity, Total (as CaCO3)	98.5500	5.0	99.9580		98.6	80 - 120			
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Duplicate (B6D0220-DUP1)

Source: 1601225-04

Prepared: 4/11/2016 Analyzed: 4/11/2016

Alkalinity, Total (as CaCO3)	241.700	5.0		242.740	NR		0.429	20	
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Matrix Spike (B6D0220-MS1)

Source: 1601225-04

Prepared: 4/11/2016 Analyzed: 4/11/2016

Alkalinity, Total (as CaCO3)	319.500	5.0	99.9580	242.740	76.8	80 - 120			M1
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Matrix Spike Dup (B6D0220-MSD1)

Source: 1601225-04

Prepared: 4/11/2016 Analyzed: 4/11/2016

Alkalinity, Total (as CaCO3)	322.610	5.0	99.9580	242.740	79.9	80 - 120	0.969	20	M1
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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
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Batch B6D0189 - No_Prep_WC1_W

Blank (B6D0189-BLK1)

Prepared: 4/8/2016 Analyzed: 4/8/2016

Residue, Suspended

ND

1.0

NR

LCS (B6D0189-BS1)

Prepared: 4/8/2016 Analyzed: 4/8/2016

Residue, Suspended

80.0000

10

92.1000

86.9

80 - 120

Duplicate (B6D0189-DUP1)

Source: 1601240-01

Prepared: 4/8/2016 Analyzed: 4/8/2016

Residue, Suspended

96.0000

10

106.000

NR

9.90

10



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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 B6D0153 - No_Prep_IC1_W									
Blank (B6D0153-BLK1)				Prepared: 4/6/2016 Analyzed: 4/6/2016					
Bromide	ND	0.05			NR				
LCS (B6D0153-BS1)				Prepared: 4/6/2016 Analyzed: 4/6/2016					
Bromide	1.07990	0.05	1.00000		108	90 - 110			
Duplicate (B6D0153-DUP1)				Source: 1601235-03 Prepared: 4/6/2016 Analyzed: 4/6/2016					
Bromide	0.306000	0.50		0.241800	NR		23.4	20	R
Matrix Spike (B6D0153-MS1)				Source: 1601235-03 Prepared: 4/6/2016 Analyzed: 4/6/2016					
Bromide	2.64230		2.50000	0.02418	105	80 - 120			
Matrix Spike Dup (B6D0153-MSD1)				Source: 1601235-03 Prepared: 4/6/2016 Analyzed: 4/6/2016					
Bromide	2.67140		2.50000	0.02418	106	80 - 120	1.10	20	



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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
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Batch B6D0099 - No_Prep_II_W

Blank (B6D0099-BLK1)

Prepared: 4/6/2016 Analyzed: 4/6/2016

UV Absorption

ND

0.01

NR

Duplicate (B6D0099-DUP1)

Source: 1601225-05

Prepared: 4/6/2016 Analyzed: 4/6/2016

UV Absorption

ND

0.01

ND

NR

20



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Reported : 04/21/2016

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
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Batch B6D0143 - No_Prep_II_W

Blank (B6D0143-BLK1)

Prepared: 4/6/2016 Analyzed: 4/6/2016

Organic Carbon, Total

ND

3.0

NR

LCS (B6D0143-BS1)

Prepared: 4/6/2016 Analyzed: 4/6/2016

Organic Carbon, Total

17.8400

3.0

20.0000

89.2

80 - 120

LCS Dup (B6D0143-BSD1)

Prepared: 4/6/2016 Analyzed: 4/6/2016

Organic Carbon, Total

17.5200

3.0

20.0000

87.6

80 - 120

1.81

20



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Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	Limits Limits	RPD RPD	RPD Limit	Notes
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Batch B6D0140 - MSVOA_LL_W

Blank (B6D0140-BLK1)

Prepared: 4/7/2016 Analyzed: 4/7/2016

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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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
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Batch B6D0140 - MSVOA_LL_W (continued)

Blank (B6D0140-BLK1) - Continued

Prepared: 4/7/2016 Analyzed: 4/7/2016

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				

<i>Surrogate: 1,2-Dichloroethane-d4</i>	26.89		25.0000		108	51 - 157			
<i>Surrogate: 4-Bromofluorobenzene</i>	23.79		25.0000		95.2	61 - 123			
<i>Surrogate: Dibromofluoromethane</i>	26.74		25.0000		107	57 - 147			
<i>Surrogate: Toluene-d8</i>	25.78		25.0000		103	61 - 119			

LCS (B6D0140-BS1)

Prepared: 4/7/2016 Analyzed: 4/7/2016

1,1,1,2-Tetrachloroethane	20.1600	0.50	20.0000		101	76 - 132			
1,1,1-Trichloroethane	21.2300	0.50	20.0000		106	72 - 144			
1,1,2,2-Tetrachloroethane	18.8300	0.50	20.0000		94.2	70 - 120			
1,1,2-Trichloroethane	18.7500	0.50	20.0000		93.8	75 - 120			
1,1-Dichloroethane	24.3400	0.50	20.0000		122	65 - 127			
1,1-Dichloroethene	23.6900	0.50	20.0000		118	63 - 142			
1,1-Dichloropropene	21.2300	0.50	20.0000		106	78 - 137			
1,2,3-Trichloropropane	18.4400	0.50	20.0000		92.2	73 - 118			
1,2,3-Trichlorobenzene	19.1500	0.50	20.0000		95.8	53 - 164			
1,2,4-Trichlorobenzene	19.5500	0.50	20.0000		97.8	58 - 144			
1,2,4-Trimethylbenzene	20.1200	0.50	20.0000		101	75 - 140			
1,2-Dibromo-3-chloropropane	19.1000	0.50	20.0000		95.5	61 - 131			
1,2-Dibromoethane	17.9000	0.50	20.0000		89.5	74 - 125			
1,2-Dichlorobenzene	19.9100	0.50	20.0000		99.6	78 - 122			
1,2-Dichloroethane	17.8900	0.50	20.0000		89.4	70 - 126			
1,2-Dichloropropane	19.3400	0.50	20.0000		96.7	69 - 120			
1,3,5-Trimethylbenzene	20.3400	0.50	20.0000		102	73 - 145			
1,3-Dichlorobenzene	19.8000	0.50	20.0000		99.0	76 - 126			
1,3-Dichloropropane	19.2700	0.50	20.0000		96.4	76 - 117			



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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
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Batch B6D0140 - MSVOA_LL_W (continued)

LCS (B6D0140-BS1) - Continued

Prepared: 4/7/2016 Analyzed: 4/7/2016

1,4-Dichlorobenzene	19.6000	0.50	20.0000		98.0	77 - 120			
2,2-Dichloropropane	24.5300	0.50	20.0000		123	47 - 169			
2-Chlorotoluene	19.9800	0.50	20.0000		99.9	75 - 135			
4-Chlorotoluene	20.0300	0.50	20.0000		100	70 - 133			
4-Isopropyltoluene	20.2900	0.50	20.0000		101	72 - 153			
Benzene	39.4100	0.50	40.0000		98.5	73 - 123			
Bromobenzene	19.1700	0.50	20.0000		95.8	75 - 121			
Bromodichloromethane	20.9700	0.50	20.0000		105	73 - 124			
Bromoform	19.2500	0.50	20.0000		96.2	70 - 135			
Bromomethane	30.3900	0.50	20.0000		152	10 - 166			
Carbon tetrachloride	25.0000	0.50	20.0000		125	65 - 171			
Chlorobenzene	19.4100	0.50	20.0000		97.0	80 - 121			
Chloroethane	27.6000	0.50	20.0000		138	55 - 143			
Chloroform	18.0000	0.50	20.0000		90.0	65 - 130			
Chloromethane	19.4500	0.50	20.0000		97.2	21 - 141			
cis-1,2-Dichloroethene	18.9100	0.50	20.0000		94.6	64 - 126			
cis-1,3-Dichloropropene	19.0500	0.50	20.0000		95.2	70 - 131			
Dibromochloromethane	19.2800	0.50	20.0000		96.4	74 - 125			
Dibromomethane	18.5300	0.50	20.0000		92.6	74 - 116			
Dichlorodifluoromethane	20.6900	0.50	20.0000		103	40 - 186			
Ethylbenzene	40.3500	0.50	40.0000		101	77 - 130			
Hexachlorobutadiene	20.6300	0.50	20.0000		103	52 - 176			
Isopropylbenzene	22.3000	0.50	20.0000		112	77 - 144			
m,p-Xylene	42.1600	1.0	40.0000		105	84 - 136			
Methylene chloride	20.2800	1.0	20.0000		101	72 - 150			
n-Butylbenzene	21.3600	0.50	20.0000		107	73 - 154			
n-Propylbenzene	21.2900	0.50	20.0000		106	77 - 145			
Naphthalene	18.9600	0.50	20.0000		94.8	55 - 137			
o-Xylene	40.2300	0.50	40.0000		101	79 - 135			
sec-Butylbenzene	20.8800	0.50	20.0000		104	73 - 157			
Styrene	20.5000	0.50	20.0000		102	78 - 125			
tert-Butylbenzene	20.3400	0.50	20.0000		102	78 - 149			
Tetrachloroethene	20.9600	0.50	20.0000		105	74 - 136			
Toluene	39.6000	0.50	40.0000		99.0	78 - 124			
trans-1,2-Dichloroethene	22.3800	0.50	20.0000		112	66 - 131			
Trichloroethene	19.0900	0.50	20.0000		95.4	78 - 128			
Trichlorofluoromethane	24.7000	0.50	20.0000		124	60 - 170			
Vinyl chloride	21.9400	0.50	20.0000		110	55 - 148			
<hr/>									
Surrogate: 1,2-Dichloroethane-d4	24.69		25.0000		98.8	51 - 157			
Surrogate: 4-Bromofluorobenzene	23.97		25.0000		95.9	61 - 123			
Surrogate: Dibromofluoromethane	25.01		25.0000		100	57 - 147			



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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 Limit	Notes
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Batch B6D0140 - MSVOA_LL_W (continued)

LCS (B6D0140-BS1) - Continued

Prepared: 4/7/2016 Analyzed: 4/7/2016

Surrogate: Toluene-d8 24.96 25.0000

99.8 61 - 119

LCS Dup (B6D0140-BSD1)

Prepared: 4/7/2016 Analyzed: 4/7/2016

1,1,1,2-Tetrachloroethane	18.8200	0.50	20.0000	94.1	76 - 132	6.88	20
1,1,1-Trichloroethane	19.8500	0.50	20.0000	99.2	72 - 144	6.72	20
1,1,2,2-Tetrachloroethane	20.0000	0.50	20.0000	100	70 - 120	6.03	20
1,1,2-Trichloroethane	18.4000	0.50	20.0000	92.0	75 - 120	1.88	20
1,1-Dichloroethane	23.3600	0.50	20.0000	117	65 - 127	4.11	20
1,1-Dichloroethene	22.2800	0.50	20.0000	111	63 - 142	6.13	20
1,1-Dichloropropene	19.6900	0.50	20.0000	98.4	78 - 137	7.53	20
1,2,3-Trichloropropane	19.1600	0.50	20.0000	95.8	73 - 118	3.83	20
1,2,3-Trichlorobenzene	18.1800	0.50	20.0000	90.9	53 - 164	5.20	20
1,2,4-Trichlorobenzene	18.1600	0.50	20.0000	90.8	58 - 144	7.37	20
1,2,4-Trimethylbenzene	18.3900	0.50	20.0000	92.0	75 - 140	8.98	20
1,2-Dibromo-3-chloropropane	19.5100	0.50	20.0000	97.6	61 - 131	2.12	20
1,2-Dibromoethane	18.1300	0.50	20.0000	90.6	74 - 125	1.28	20
1,2-Dichlorobenzene	18.5100	0.50	20.0000	92.6	78 - 122	7.29	20
1,2-Dichloroethane	17.4000	0.50	20.0000	87.0	70 - 126	2.78	20
1,2-Dichloropropane	18.5000	0.50	20.0000	92.5	69 - 120	4.44	20
1,3,5-Trimethylbenzene	18.6400	0.50	20.0000	93.2	73 - 145	8.72	20
1,3-Dichlorobenzene	17.8800	0.50	20.0000	89.4	76 - 126	10.2	20
1,3-Dichloropropane	18.4900	0.50	20.0000	92.4	76 - 117	4.13	20
1,4-Dichlorobenzene	17.9900	0.50	20.0000	90.0	77 - 120	8.57	20
2,2-Dichloropropane	23.1400	0.50	20.0000	116	47 - 169	5.83	20
2-Chlorotoluene	18.4700	0.50	20.0000	92.4	75 - 135	7.85	20
4-Chlorotoluene	18.5600	0.50	20.0000	92.8	70 - 133	7.62	20
4-Isopropyltoluene	18.4200	0.50	20.0000	92.1	72 - 153	9.66	20
Benzene	36.4800	0.50	40.0000	91.2	73 - 123	7.72	20
Bromobenzene	18.1100	0.50	20.0000	90.6	75 - 121	5.69	20
Bromodichloromethane	20.0000	0.50	20.0000	100	73 - 124	4.74	20
Bromoform	18.8200	0.50	20.0000	94.1	70 - 135	2.26	20
Bromomethane	26.8400	0.50	20.0000	134	10 - 166	12.4	20
Carbon tetrachloride	23.4000	0.50	20.0000	117	65 - 171	6.61	20
Chlorobenzene	17.6700	0.50	20.0000	88.4	80 - 121	9.39	20
Chloroethane	26.8300	0.50	20.0000	134	55 - 143	2.83	20
Chloroform	17.8100	0.50	20.0000	89.0	65 - 130	1.06	20
Chloromethane	17.9300	0.50	20.0000	89.6	21 - 141	8.13	20
cis-1,2-Dichloroethene	17.9600	0.50	20.0000	89.8	64 - 126	5.15	20
cis-1,3-Dichloropropene	18.8000	0.50	20.0000	94.0	70 - 131	1.32	20
Dibromochloromethane	18.6600	0.50	20.0000	93.3	74 - 125	3.27	20
Dibromomethane	18.1100	0.50	20.0000	90.6	74 - 116	2.29	20
Dichlorodifluoromethane	18.4200	0.50	20.0000	92.1	40 - 186	11.6	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	% Rec Limits	RPD	RPD Limit	Notes
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Batch B6D0140 - MSVOA_LL_W (continued)

LCS Dup (B6D0140-BSD1) - Continued

Prepared: 4/7/2016 Analyzed: 4/7/2016

Ethylbenzene	36.2900	0.50	40.0000		90.7	77 - 130	10.6	20	
Hexachlorobutadiene	18.1100	0.50	20.0000		90.6	52 - 176	13.0	20	
Isopropylbenzene	20.4300	0.50	20.0000		102	77 - 144	8.75	20	
m,p-Xylene	38.1500	1.0	40.0000		95.4	84 - 136	9.99	20	
Methylene chloride	19.1900	1.0	20.0000		96.0	72 - 150	5.52	20	
n-Butylbenzene	19.2300	0.50	20.0000		96.2	73 - 154	10.5	20	
n-Propylbenzene	19.4100	0.50	20.0000		97.0	77 - 145	9.24	20	
Naphthalene	18.4400	0.50	20.0000		92.2	55 - 137	2.78	20	
o-Xylene	36.8400	0.50	40.0000		92.1	79 - 135	8.80	20	
sec-Butylbenzene	18.9300	0.50	20.0000		94.6	73 - 157	9.80	20	
Styrene	18.7400	0.50	20.0000		93.7	78 - 125	8.97	20	
tert-Butylbenzene	18.7500	0.50	20.0000		93.8	78 - 149	8.14	20	
Tetrachloroethene	17.9500	0.50	20.0000		89.8	74 - 136	15.5	20	
Toluene	36.3000	0.50	40.0000		90.8	78 - 124	8.70	20	
trans-1,2-Dichloroethene	21.4400	0.50	20.0000		107	66 - 131	4.29	20	
Trichloroethene	17.6400	0.50	20.0000		88.2	78 - 128	7.90	20	
Trichlorofluoromethane	23.1300	0.50	20.0000		116	60 - 170	6.56	20	
Vinyl chloride	20.3700	0.50	20.0000		102	55 - 148	7.42	20	
<hr/>									
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>22.80</i>		<i>25.0000</i>		<i>91.2</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>21.05</i>		<i>25.0000</i>		<i>84.2</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>22.30</i>		<i>25.0000</i>		<i>89.2</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>22.07</i>		<i>25.0000</i>		<i>88.3</i>	<i>61 - 119</i>			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

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
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Batch B6D0155 - MSSEMI_W

Blank (B6D0155-BLK1)

Prepared: 4/7/2016 Analyzed: 4/7/2016

1,4-Dioxane	ND	2.0			NR				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	61.62		100.000		61.6	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	72.99		100.000		73.0	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	87.91		100.000		87.9	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	66.82		100.000		66.8	43 - 116			

LCS (B6D0155-BS1)

Prepared: 4/7/2016 Analyzed: 4/7/2016

1,4-Dioxane	103.630	2.0	100.000		104	62 - 127			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	59.78		100.000		59.8	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	72.39		100.000		72.4	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	81.00		100.000		81.0	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	66.22		100.000		66.2	43 - 116			

LCS Dup (B6D0155-BSD1)

Prepared: 4/7/2016 Analyzed: 4/7/2016

1,4-Dioxane	107.950	2.0	100.000		108	62 - 127	4.08	20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	57.50		100.000		57.5	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	73.96		100.000		74.0	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	83.12		100.000		83.1	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	66.54		100.000		66.5	43 - 116			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

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	RPD Limit	Notes
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Batch B6D0132 - MSEMISOTOPEDILN_W

Blank (B6D0132-BLK1)

Prepared: 4/6/2016 Analyzed: 4/7/2016

1,4-Dioxane	ND	0.20		NR					
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>0.6843</i>		<i>1.00000</i>		<i>68.4</i>	<i>31 - 106</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>0.7306</i>		<i>1.00000</i>		<i>73.1</i>	<i>28 - 122</i>			
<i>Surrogate: 4-Terphenyl-d14</i>	<i>0.7648</i>		<i>1.00000</i>		<i>76.5</i>	<i>43 - 131</i>			
<i>Surrogate: Nitrobenzene-d5</i>	<i>0.6904</i>		<i>1.00000</i>		<i>69.0</i>	<i>20 - 119</i>			

LCS (B6D0132-BS1)

Prepared: 4/6/2016 Analyzed: 4/7/2016

1,4-Dioxane	1.18047	0.20	1.00000		118	49 - 169			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>0.7058</i>		<i>1.00000</i>		<i>70.6</i>	<i>31 - 106</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>0.7525</i>		<i>1.00000</i>		<i>75.2</i>	<i>28 - 122</i>			
<i>Surrogate: 4-Terphenyl-d14</i>	<i>0.7592</i>		<i>1.00000</i>		<i>75.9</i>	<i>43 - 131</i>			
<i>Surrogate: Nitrobenzene-d5</i>	<i>0.6883</i>		<i>1.00000</i>		<i>68.8</i>	<i>20 - 119</i>			

LCS Dup (B6D0132-BSD1)

Prepared: 4/6/2016 Analyzed: 4/7/2016

1,4-Dioxane	1.15849	0.20	1.00000		116	49 - 169	1.88	20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>0.6798</i>		<i>1.00000</i>		<i>68.0</i>	<i>31 - 106</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>0.7246</i>		<i>1.00000</i>		<i>72.5</i>	<i>28 - 122</i>			
<i>Surrogate: 4-Terphenyl-d14</i>	<i>0.7470</i>		<i>1.00000</i>		<i>74.7</i>	<i>43 - 131</i>			
<i>Surrogate: Nitrobenzene-d5</i>	<i>0.6918</i>		<i>1.00000</i>		<i>69.2</i>	<i>20 - 119</i>			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 04/21/2016

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
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.

Client: Advanced Technology Laboratories
 Job No.: 203339

Bromate by EPA 317.0
 Ion Chromatography with Post-Column Derivatization-Visible Absorption

Column: Dionex AS9-HC 250 mm x 4 mm, AG9-HC Guard 50 mm x 4 mm
 Eluent: 10 mM Na₂CO₃
 Flow: 1.2 mL/min
 Injection: 250 µL
 Detection: Post-column derivatization, Visible detection, 450 nm

Sample preparation: The undiluted sample was treated with a Dionex OnGuard II H cartridge to remove excess basic cations.

Parts Per Billion (µg/L)

<u>Sample ID</u>	<u>Result</u>
ATL Lab#: 1601225-04 / POX	0.5
Method Blank	ND
Detection Limit	0.5
Date Analyzed:	04-20-16

Quality Control Summary

Sample ID:	Batch QC						
<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	ND	1000	1050	105	1100	110	5
QC Guidelines				75-125		75-125	NMT 10

Exova Inc – Santa Fe Springs – 562-948-2225
 The above data is considered preliminary and may not reflect final reported values.
 A final signed report will be mailed to you.


ADVANCED TECHNOLOGY
 LABORATORIES

SUBCONTRACT ORDER

Work Order: 1601225

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#: SC10304- STANDARD TAT (24)

IMPORTANT : Please include Work Order # and PO # in your invoice.

Analysis	Due	Expires	Matrix	Date Sampled
ATL Lab#: 1601225-04 / POX			Groundwater	04/05/16 08:10
317.0_SUB	04/19/16 17:00	04/06/16 08:10		
[Bromate]				
1-Poly Unpres - 125mL				
Comments:				

Released By <i>MSN</i>	Date <i>4/6/16</i>	Received By <i>[Signature]</i>	Date <i>4-6-16 8:30</i>
Released By <i>[Signature]</i>	Date <i>4-6-16 13:01</i>	Received By <i>[Signature]</i>	Date <i>04-06-16 1:01 PM</i>

PROJECT: Raytheon Main GETS Monthly Sample

TASK NO.: 532.15

Project Manager Steve Netto
QA Manager Kevin Fong
Phone 858.455.6500
Fax 858.455.6533

Sampled By:
Kevin Fong
Mike Larkin

SAMPLE COLLECTION

LAB ID	SAMPLE ID	Date	Time
1601225-1	TB-040516	4/5/2016	7:00
-2	CEFF		7:55
-3	CBT		8:05
-4	POX		8:10
-5	PF		8:20
-6	INF		8:30
-7	EW-02		8:58
-8	MW-29		9:18

MATRIX	PRESERVATION	CONTAINERS					ANALYSIS REQUESTED										Expected Concentration Range (ppb) for VOA's				SPECIAL HANDLING																	
		Groundwater	Lab prepared water	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sodium Hydroxide (NaOH)	Sulfuric Acid (H ₂ SO ₄)	Ice	40-ml VOA	125 mL Poly	250 mL Poly	250 mL Glass	1 L Poly	1 L Amber	VOCs by EPA 8260B	Bromate by EPA 317	Bromide by EPA 300	Alkalinity by SM2320B	Total Organic Carbon by SM5310B	Total Suspended Solids by SM2540D	UV Absorption EPA 415.3 @254 nm	1,4-Dioxane by EPA 8270C MOD	1,4-Dioxane by EPA 8270C SIM	0 - 10	10- 100	100 - 1,000	>1,000	24 hr TAT	48 hr TAT	5 Day TAT	Level IV Data Validation Requested	MS/MSD Requested						
		X	X				X	2						X																								
		X	X				X	3					1	X									X															
		X	X				X	3						X									X															
		X			X	X	X	6	1	1			1	X	X		X	X	X	X			X	X														
		X			X	X	X	3		1	1	1					X	X	X	X																		
		X	X				X	3	1				1	X	X							X			X													
		X	X				X	3	1				1	X	X							X			X													

Laboratory
Advanced Technology Laboratories
Attn: Rachele Arada
3275 Walnut Ave
Signal Hill, CA 90755
(562) 989-4045

REMARKS

Total number of containers per analysis:				26	4	2	1	1	5
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time						
<u>Kevin Fong / H+A</u>	<u>4/5/16 10:13</u>	<u>[Signature]</u>	<u>4/4/16 10:15</u>						
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time						
<u>[Signature]</u>	<u>4/5/16 14:03</u>	<u>[Signature]</u>	<u>4/5/16 14:03</u>						

- No. of containers correct
- Received in good condition
- Custody seals secure
- Conforms to COC document

Send Results to:
Steve Netto
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122
Ph: 858.455.5400
snetto@hargis.com

Instructions

Fill out form completely and sign only after verified for completeness
Complete in ballpoint pen. Draw one line through error, initial and date correction
Indicate the number of sample containers in analytical request space; indicate choice with ✓ or ✗
Note applicable preservatives, special instructions, and deviations from typical environmental samples.
Consult project QA documents for specific instructions.

0.5 Temperature on receipt

April 12, 2016

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 : 1601226
Client Reference : Raytheon Main GETS Flow Mod., 532.15

Enclosed are the results for sample(s) received on April 05, 2016 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,



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 GETS Flow Mod., 532.15

Report To : Steve Netto

Reported : 04/12/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
INF-01	1601226-01	Groundwater	4/05/16 9:41	4/05/16 10:15
POX-01	1601226-02	Groundwater	4/05/16 10:10	4/05/16 10:15
CEFF-01	1601226-03	Groundwater	4/05/16 10:11	4/05/16 10:15



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Flow Mod., 532.15

Report To : Steve Netto

Reported : 04/12/2016

Client Sample ID INF-01

Lab ID: 1601226-01

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	25	2.0	1	B6D0155	04/07/2016	04/07/16 16:05	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>60.8 %</i>	<i>42 - 106</i>		B6D0155	04/07/2016	<i>04/07/16 16:05</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>73.3 %</i>	<i>55 - 117</i>		B6D0155	04/07/2016	<i>04/07/16 16:05</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>88.6 %</i>	<i>52 - 142</i>		B6D0155	04/07/2016	<i>04/07/16 16:05</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>66.9 %</i>	<i>43 - 116</i>		B6D0155	04/07/2016	<i>04/07/16 16:05</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Flow Mod,, 532.15

Report To : Steve Netto

Reported : 04/12/2016

Client Sample ID POX-01

Lab ID: 1601226-02

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6D0132	04/06/2016	04/07/16 16:15	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>69.4 %</i>	<i>31 - 106</i>		B6D0132	04/06/2016	<i>04/07/16 16:15</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>76.3 %</i>	<i>28 - 122</i>		B6D0132	04/06/2016	<i>04/07/16 16:15</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>75.6 %</i>	<i>43 - 131</i>		B6D0132	04/06/2016	<i>04/07/16 16:15</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>70.2 %</i>	<i>20 - 119</i>		B6D0132	04/06/2016	<i>04/07/16 16:15</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Flow Mod,, 532.15

Report To : Steve Netto

Reported : 04/12/2016

Client Sample ID CEFF-01

Lab ID: 1601226-03

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6D0132	04/06/2016	04/07/16 16:42	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>55.9 %</i>	<i>31 - 106</i>		B6D0132	04/06/2016	<i>04/07/16 16:42</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>60.2 %</i>	<i>28 - 122</i>		B6D0132	04/06/2016	<i>04/07/16 16:42</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>70.1 %</i>	<i>43 - 131</i>		B6D0132	04/06/2016	<i>04/07/16 16:42</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>56.0 %</i>	<i>20 - 119</i>		B6D0132	04/06/2016	<i>04/07/16 16:42</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Flow Mod,, 532.15

Report To : Steve Netto

Reported : 04/12/2016

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
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Batch B6D0155 - MSSEMI_W

Blank (B6D0155-BLK1)

Prepared: 4/7/2016 Analyzed: 4/7/2016

1,4-Dioxane	ND	2.0				NR			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	61.62		100.000		61.6	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	72.99		100.000		73.0	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	87.91		100.000		87.9	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	66.82		100.000		66.8	43 - 116			

LCS (B6D0155-BS1)

Prepared: 4/7/2016 Analyzed: 4/7/2016

1,4-Dioxane	103.630	2.0	100.000		104	62 - 127			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	59.78		100.000		59.8	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	72.39		100.000		72.4	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	81.00		100.000		81.0	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	66.22		100.000		66.2	43 - 116			

LCS Dup (B6D0155-BSD1)

Prepared: 4/7/2016 Analyzed: 4/7/2016

1,4-Dioxane	107.950	2.0	100.000		108	62 - 127	4.08	20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	57.50		100.000		57.5	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	73.96		100.000		74.0	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	83.12		100.000		83.1	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	66.54		100.000		66.5	43 - 116			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Flow Mod,, 532.15

Report To : Steve Netto

Reported : 04/12/2016

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
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Batch B6D0132 - MSEMI_ISOTOPEDILN

Blank (B6D0132-BLK1)

Prepared: 4/6/2016 Analyzed: 4/7/2016

1,4-Dioxane	ND	0.20			NR				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>0.6843</i>		<i>1.00000</i>		<i>68.4</i>	<i>31 - 106</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>0.7306</i>		<i>1.00000</i>		<i>73.1</i>	<i>28 - 122</i>			
<i>Surrogate: 4-Terphenyl-d14</i>	<i>0.7648</i>		<i>1.00000</i>		<i>76.5</i>	<i>43 - 131</i>			
<i>Surrogate: Nitrobenzene-d5</i>	<i>0.6904</i>		<i>1.00000</i>		<i>69.0</i>	<i>20 - 119</i>			

LCS (B6D0132-BS1)

Prepared: 4/6/2016 Analyzed: 4/7/2016

1,4-Dioxane	1.18047	0.20	1.00000		118	49 - 169			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>0.7058</i>		<i>1.00000</i>		<i>70.6</i>	<i>31 - 106</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>0.7525</i>		<i>1.00000</i>		<i>75.2</i>	<i>28 - 122</i>			
<i>Surrogate: 4-Terphenyl-d14</i>	<i>0.7592</i>		<i>1.00000</i>		<i>75.9</i>	<i>43 - 131</i>			
<i>Surrogate: Nitrobenzene-d5</i>	<i>0.6883</i>		<i>1.00000</i>		<i>68.8</i>	<i>20 - 119</i>			

LCS Dup (B6D0132-BSD1)

Prepared: 4/6/2016 Analyzed: 4/7/2016

1,4-Dioxane	1.15849	0.20	1.00000		116	49 - 169	1.88	20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>0.6798</i>		<i>1.00000</i>		<i>68.0</i>	<i>31 - 106</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>0.7246</i>		<i>1.00000</i>		<i>72.5</i>	<i>28 - 122</i>			
<i>Surrogate: 4-Terphenyl-d14</i>	<i>0.7470</i>		<i>1.00000</i>		<i>74.7</i>	<i>43 - 131</i>			
<i>Surrogate: Nitrobenzene-d5</i>	<i>0.6918</i>		<i>1.00000</i>		<i>69.2</i>	<i>20 - 119</i>			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Flow Mod., 532.15

Report To : Steve Netto

Reported : 04/12/2016

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

PROJECT NAME <i>Raytheon Main GETS Flow Mod</i>		PROJECT No./TASK No. <i>532.15</i>		SAMPLE CONTAINERS		ANALYSIS REQUESTED		ESTIMATED CONCENTRATION RANGE (ppb) FOR VOA'S		SPECIAL HANDLING		LABORATORY INFORMATION	
PROJECT MANAGER <i>Steve Netto</i>		Phone No. <i>858.455.6500</i>		<i>1,4-Dioxane by 8270C HOD 1,4-Dioxane by 8270C SIM</i>								<i>Advanced Technology Laboratories Attn: Rachelle Arada</i>	
QA MANAGER <i>Kevin Fong</i>		Fax No.											
SAMPLER (SIGNATURE) <i>Kevin Fong</i>		SAMPLER (PRINTED) <i>Kevin Fong</i>											
LAB ID	SAMPLE ID	SAMPLE COLLECTION		MATRIX		PRESERVATION					REMARKS		
		Date	Time	Soil	Ground water	Surface water	HCl	HNO ₃	NaOH	H ₂ SO ₄		Ice	
<i>160122C-1</i>	<i>INF-01</i>	<i>4/5/16</i>	<i>9:41</i>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
<i>↓ -2</i>	<i>POX-01</i>	<i>↓</i>	<i>10:10</i>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
<i>↓ -3</i>	<i>CEFF-01</i>	<i>↓</i>	<i>10:11</i>	<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>		
Total number of Containers per analysis: <i>3</i>											Total No. of Containers: <u>3</u>		

Relinquished by: <i>Kevin Fong</i>		Date <i>4/5/16</i>	Received by: <i>[Signature]</i>		Date <i>4/5/16</i>	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 <i>H+A</i>		Time <i>10:13</i>	Company <i>[Signature]</i>		Time <i>10:15</i>		<input checked="" type="checkbox"/> 9171 TOWNE CENTRE DRIVE, SUITE 375 SAN DIEGO, CA 92122 (858) 455-6500	
Relinquished by: <i>[Signature]</i>		Date <i>4/5/16</i>	Received by: <i>[Signature]</i>		Date <i>4/5/16</i>		<input type="checkbox"/> 1640 SOUTH STAPLEY DRIVE, SUITE 209 MESA, AZ 85204 (480) 345-0888	
Company <i>[Signature]</i>		Time <i>14:03</i>	Company <i>[Signature]</i>		Time <i>14:03</i>		<input type="checkbox"/> 1820 EAST RIVER ROAD, SUITE 220 TUCSON, AZ 85718 (520) 881-7300	
Sample Receipt:				Temp. @ receipt <u>0.5</u> °C				
<input type="checkbox"/> No. of containers correct		<input checked="" type="checkbox"/> received good condition/cold		<input type="checkbox"/> custody seals secure		<input type="checkbox"/> conforms to COC document		Send invoice to San Diego, CA Attn: Accounts Payable

April 29, 2016

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

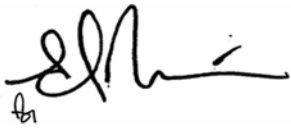
Re: ATL Work Order Number : 1601446

Client Reference : Raytheon Main GETS Mid Monthly Sample, 532.15

Enclosed are the results for sample(s) received on April 21, 2016 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,



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 GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 04/29/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-042116	1601446-01	Lab prepared water	4/21/16 7:00	4/21/16 10:40
CEFF	1601446-02	Groundwater	4/21/16 7:30	4/21/16 10:40
CBT	1601446-03	Groundwater	4/21/16 7:40	4/21/16 10:40
POX	1601446-04	Groundwater	4/21/16 7:55	4/21/16 10:40
INF	1601446-05	Groundwater	4/21/16 8:10	4/21/16 10:40
EW-02	1601446-06	Groundwater	4/21/16 8:35	4/21/16 10:40
MW-29	1601446-07	Groundwater	4/21/16 9:00	4/21/16 10:40



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID TB-042116

Lab ID: 1601446-01

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,1,1-Trichloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,1,2-Trichloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,1-Dichloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,1-Dichloroethene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,1-Dichloropropene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,2,3-Trichloropropane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,2,3-Trichlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,2,4-Trichlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,2,4-Trimethylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,2-Dibromoethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,2-Dichlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,2-Dichloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,2-Dichloropropane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,3,5-Trimethylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,3-Dichlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,3-Dichloropropane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
1,4-Dichlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
2,2-Dichloropropane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
2-Chlorotoluene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
4-Chlorotoluene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
4-Isopropyltoluene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Benzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Bromobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Bromodichloromethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Bromoform	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Bromomethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Carbon tetrachloride	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Chlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Chloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Chloroform	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Chloromethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
cis-1,2-Dichloroethene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
cis-1,3-Dichloropropene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Dibromochloromethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID TB-042116

Lab ID: 1601446-01

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Dichlorodifluoromethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Ethylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Hexachlorobutadiene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Isopropylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
m,p-Xylene	ND	1.0	1	B6D0629	04/26/2016	04/26/16 19:44	
Methylene chloride	ND	1.0	1	B6D0629	04/26/2016	04/26/16 19:44	
n-Butylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
n-Propylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Naphthalene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
o-Xylene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
sec-Butylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Styrene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
tert-Butylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Tetrachloroethene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Toluene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
trans-1,2-Dichloroethene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Trichloroethene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Trichlorofluoromethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
Vinyl chloride	ND	0.50	1	B6D0629	04/26/2016	04/26/16 19:44	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.0 %</i>	<i>51 - 157</i>		B6D0629	04/26/2016	<i>04/26/16 19:44</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>102 %</i>	<i>61 - 123</i>		B6D0629	04/26/2016	<i>04/26/16 19:44</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.2 %</i>	<i>57 - 147</i>		B6D0629	04/26/2016	<i>04/26/16 19:44</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>61 - 119</i>		B6D0629	04/26/2016	<i>04/26/16 19:44</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID CEFF

Lab ID: 1601446-02

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,1,1-Trichloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,1,2-Trichloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,1-Dichloroethane	0.68	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,1-Dichloroethene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,1-Dichloropropene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,2,3-Trichloropropane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,2,3-Trichlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,2,4-Trichlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,2,4-Trimethylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,2-Dibromoethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,2-Dichlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,2-Dichloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,2-Dichloropropane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,3,5-Trimethylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,3-Dichlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,3-Dichloropropane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
1,4-Dichlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
2,2-Dichloropropane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
2-Chlorotoluene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
4-Chlorotoluene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
4-Isopropyltoluene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Benzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Bromobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Bromodichloromethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Bromoform	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Bromomethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Carbon tetrachloride	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Chlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Chloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Chloroform	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Chloromethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
cis-1,2-Dichloroethene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
cis-1,3-Dichloropropene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Dibromochloromethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID CEFF

Lab ID: 1601446-02

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Dichlorodifluoromethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Ethylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Hexachlorobutadiene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Isopropylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
m,p-Xylene	ND	1.0	1	B6D0629	04/26/2016	04/26/16 20:06	
Methylene chloride	ND	1.0	1	B6D0629	04/26/2016	04/26/16 20:06	
n-Butylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
n-Propylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Naphthalene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
o-Xylene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
sec-Butylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Styrene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
tert-Butylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Tetrachloroethene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Toluene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
trans-1,2-Dichloroethene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Trichloroethene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Trichlorofluoromethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
Vinyl chloride	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:06	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>	<i>51 - 157</i>		B6D0629	04/26/2016	<i>04/26/16 20:06</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>101 %</i>	<i>61 - 123</i>		B6D0629	04/26/2016	<i>04/26/16 20:06</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>103 %</i>	<i>57 - 147</i>		B6D0629	04/26/2016	<i>04/26/16 20:06</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6D0629	04/26/2016	<i>04/26/16 20:06</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID CEFF

Lab ID: 1601446-02

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	1.8	0.20	1	B6D0536	04/22/2016	04/22/16 18:30	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>71.8 %</i>	<i>31 - 106</i>		B6D0536	04/22/2016	<i>04/22/16 18:30</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>81.1 %</i>	<i>28 - 122</i>		B6D0536	04/22/2016	<i>04/22/16 18:30</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>78.7 %</i>	<i>43 - 131</i>		B6D0536	04/22/2016	<i>04/22/16 18:30</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>69.0 %</i>	<i>20 - 119</i>		B6D0536	04/22/2016	<i>04/22/16 18:30</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID CBT

Lab ID: 1601446-03

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,1,1-Trichloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,1,2-Trichloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,1-Dichloroethane	0.67	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,1-Dichloroethene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,1-Dichloropropene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,2,3-Trichloropropane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,2,3-Trichlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,2,4-Trichlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,2,4-Trimethylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,2-Dibromoethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,2-Dichlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,2-Dichloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,2-Dichloropropane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,3,5-Trimethylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,3-Dichlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,3-Dichloropropane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
1,4-Dichlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
2,2-Dichloropropane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
2-Chlorotoluene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
4-Chlorotoluene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
4-Isopropyltoluene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Benzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Bromobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Bromodichloromethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Bromoform	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Bromomethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Carbon tetrachloride	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Chlorobenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Chloroethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Chloroform	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Chloromethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
cis-1,2-Dichloroethene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
cis-1,3-Dichloropropene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Dibromochloromethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID CBT

Lab ID: 1601446-03

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Dichlorodifluoromethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Ethylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Hexachlorobutadiene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Isopropylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
m,p-Xylene	ND	1.0	1	B6D0629	04/26/2016	04/26/16 20:29	
Methylene chloride	ND	1.0	1	B6D0629	04/26/2016	04/26/16 20:29	
n-Butylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
n-Propylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Naphthalene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
o-Xylene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
sec-Butylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Styrene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
tert-Butylbenzene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Tetrachloroethene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Toluene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
trans-1,2-Dichloroethene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Trichloroethene	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Trichlorofluoromethane	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
Vinyl chloride	ND	0.50	1	B6D0629	04/26/2016	04/26/16 20:29	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>96.7 %</i>	<i>51 - 157</i>		B6D0629	04/26/2016	<i>04/26/16 20:29</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>101 %</i>	<i>61 - 123</i>		B6D0629	04/26/2016	<i>04/26/16 20:29</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>	<i>57 - 147</i>		B6D0629	04/26/2016	<i>04/26/16 20:29</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6D0629	04/26/2016	<i>04/26/16 20:29</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID CBT

Lab ID: 1601446-03

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6D0536	04/22/2016	04/22/16 18:57	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>71.0 %</i>	<i>31 - 106</i>		B6D0536	04/22/2016	<i>04/22/16 18:57</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>81.1 %</i>	<i>28 - 122</i>		B6D0536	04/22/2016	<i>04/22/16 18:57</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>73.9 %</i>	<i>43 - 131</i>		B6D0536	04/22/2016	<i>04/22/16 18:57</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>68.1 %</i>	<i>20 - 119</i>		B6D0536	04/22/2016	<i>04/22/16 18:57</i>	



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9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID POX

Lab ID: 1601446-04

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,1,1-Trichloroethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,1,2-Trichloroethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,1-Dichloroethane	0.63	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,1-Dichloroethene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,1-Dichloropropene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,2,3-Trichloropropane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,2,3-Trichlorobenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,2,4-Trichlorobenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,2,4-Trimethylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,2-Dibromoethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,2-Dichlorobenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,2-Dichloroethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,2-Dichloropropane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,3,5-Trimethylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,3-Dichlorobenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,3-Dichloropropane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
1,4-Dichlorobenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
2,2-Dichloropropane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
2-Chlorotoluene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
4-Chlorotoluene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
4-Isopropyltoluene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Benzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Bromobenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Bromodichloromethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Bromoform	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Bromomethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Carbon tetrachloride	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Chlorobenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Chloroethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Chloroform	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Chloromethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
cis-1,2-Dichloroethene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
cis-1,3-Dichloropropene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Dibromochloromethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID POX

Lab ID: 1601446-04

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Dichlorodifluoromethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Ethylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Hexachlorobutadiene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Isopropylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
m,p-Xylene	ND	1.0	1	B6D0629	04/27/2016	04/27/16 01:19	
Methylene chloride	ND	1.0	1	B6D0629	04/27/2016	04/27/16 01:19	
n-Butylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
n-Propylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Naphthalene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
o-Xylene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
sec-Butylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Styrene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
tert-Butylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Tetrachloroethene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Toluene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
trans-1,2-Dichloroethene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Trichloroethene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Trichlorofluoromethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
Vinyl chloride	ND	0.50	1	B6D0629	04/27/2016	04/27/16 01:19	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.2 %</i>	<i>51 - 157</i>		B6D0629	04/27/2016	<i>04/27/16 01:19</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>102 %</i>	<i>61 - 123</i>		B6D0629	04/27/2016	<i>04/27/16 01:19</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>	<i>57 - 147</i>		B6D0629	04/27/2016	<i>04/27/16 01:19</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6D0629	04/27/2016	<i>04/27/16 01:19</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID POX

Lab ID: 1601446-04

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6D0536	04/22/2016	04/22/16 19:24	
Surrogate: 1,2-Dichlorobenzene-d4	70.9 %	31 - 106		B6D0536	04/22/2016	04/22/16 19:24	
Surrogate: 2-Fluorobiphenyl	84.1 %	28 - 122		B6D0536	04/22/2016	04/22/16 19:24	
Surrogate: 4-Terphenyl-d14	79.7 %	43 - 131		B6D0536	04/22/2016	04/22/16 19:24	
Surrogate: Nitrobenzene-d5	68.7 %	20 - 119		B6D0536	04/22/2016	04/22/16 19:24	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID INF

Lab ID: 1601446-05

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,1,1-Trichloroethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,1,2-Trichloroethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,1-Dichloroethane	1.1	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,1-Dichloroethene	95	5.0	10	B6D0673	04/28/2016	04/28/16 12:56	
1,1-Dichloropropene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,2,3-Trichloropropane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,2,3-Trichlorobenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,2,4-Trichlorobenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,2,4-Trimethylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,2-Dibromoethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,2-Dichlorobenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,2-Dichloroethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,2-Dichloropropane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,3,5-Trimethylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,3-Dichlorobenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,3-Dichloropropane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
1,4-Dichlorobenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
2,2-Dichloropropane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
2-Chlorotoluene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
4-Chlorotoluene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
4-Isopropyltoluene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Benzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Bromobenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Bromodichloromethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Bromoform	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Bromomethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Carbon tetrachloride	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Chlorobenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Chloroethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Chloroform	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Chloromethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
cis-1,2-Dichloroethene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
cis-1,3-Dichloropropene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Dibromochloromethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main GETS Mid Monthly Sam

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 04/29/2016

Client Sample ID INF

Lab ID: 1601446-05

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Dichlorodifluoromethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Ethylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Hexachlorobutadiene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Isopropylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
m,p-Xylene	ND	1.0	1	B6D0633	04/27/2016	04/27/16 13:20	
Methylene chloride	ND	1.0	1	B6D0633	04/27/2016	04/27/16 13:20	
n-Butylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
n-Propylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Naphthalene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
o-Xylene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
sec-Butylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Styrene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
tert-Butylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Tetrachloroethene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Toluene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
trans-1,2-Dichloroethene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Trichloroethene	0.81	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Trichlorofluoromethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
Vinyl chloride	ND	0.50	1	B6D0633	04/27/2016	04/27/16 13:20	
<hr/>							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97.6 %</i>	<i>51 - 157</i>		B6D0673	04/28/2016	<i>04/28/16 12:56</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.2 %</i>	<i>51 - 157</i>		B6D0633	04/27/2016	<i>04/27/16 13:20</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.0 %</i>	<i>61 - 123</i>		B6D0673	04/28/2016	<i>04/28/16 12:56</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>100 %</i>	<i>61 - 123</i>		B6D0633	04/27/2016	<i>04/27/16 13:20</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>100 %</i>	<i>57 - 147</i>		B6D0673	04/28/2016	<i>04/28/16 12:56</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>57 - 147</i>		B6D0633	04/27/2016	<i>04/27/16 13:20</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6D0673	04/28/2016	<i>04/28/16 12:56</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>61 - 119</i>		B6D0633	04/27/2016	<i>04/27/16 13:20</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID INF

Lab ID: 1601446-05

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	24	2.0	1	B6D0544	04/22/2016	04/22/16 21:11	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>60.8 %</i>	<i>42 - 106</i>		B6D0544	04/22/2016	<i>04/22/16 21:11</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>71.4 %</i>	<i>55 - 117</i>		B6D0544	04/22/2016	<i>04/22/16 21:11</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>96.3 %</i>	<i>52 - 142</i>		B6D0544	04/22/2016	<i>04/22/16 21:11</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>65.7 %</i>	<i>43 - 116</i>		B6D0544	04/22/2016	<i>04/22/16 21:11</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID EW-02

Lab ID: 1601446-06

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,1,1-Trichloroethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,1,2-Trichloroethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,1-Dichloroethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,1-Dichloroethene	31	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,1-Dichloropropene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,2,3-Trichloropropane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,2,3-Trichlorobenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,2,4-Trichlorobenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,2,4-Trimethylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,2-Dibromoethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,2-Dichlorobenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,2-Dichloroethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,2-Dichloropropane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,3,5-Trimethylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,3-Dichlorobenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,3-Dichloropropane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
1,4-Dichlorobenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
2,2-Dichloropropane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
2-Chlorotoluene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
4-Chlorotoluene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
4-Isopropyltoluene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Benzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Bromobenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Bromodichloromethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Bromoform	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Bromomethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Carbon tetrachloride	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Chlorobenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Chloroethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Chloroform	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Chloromethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
cis-1,2-Dichloroethene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
cis-1,3-Dichloropropene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Dibromochloromethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID EW-02

Lab ID: 1601446-06

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Dichlorodifluoromethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Ethylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Hexachlorobutadiene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Isopropylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
m,p-Xylene	ND	1.0	1	B6D0629	04/27/2016	04/27/16 00:57	
Methylene chloride	ND	1.0	1	B6D0629	04/27/2016	04/27/16 00:57	
n-Butylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
n-Propylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Naphthalene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
o-Xylene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
sec-Butylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Styrene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
tert-Butylbenzene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Tetrachloroethene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Toluene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
trans-1,2-Dichloroethene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Trichloroethene	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Trichlorofluoromethane	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
Vinyl chloride	ND	0.50	1	B6D0629	04/27/2016	04/27/16 00:57	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97.6 %</i>	<i>51 - 157</i>		B6D0629	04/27/2016	04/27/16 00:57	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.2 %</i>	<i>61 - 123</i>		B6D0629	04/27/2016	04/27/16 00:57	
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>	<i>57 - 147</i>		B6D0629	04/27/2016	04/27/16 00:57	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6D0629	04/27/2016	04/27/16 00:57	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID EW-02

Lab ID: 1601446-06

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	7.5	2.0	1	B6D0544	04/22/2016	04/22/16 21:38	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>56.9 %</i>	<i>42 - 106</i>		<i>B6D0544</i>	<i>04/22/2016</i>	<i>04/22/16 21:38</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>66.4 %</i>	<i>55 - 117</i>		<i>B6D0544</i>	<i>04/22/2016</i>	<i>04/22/16 21:38</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>85.4 %</i>	<i>52 - 142</i>		<i>B6D0544</i>	<i>04/22/2016</i>	<i>04/22/16 21:38</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>61.1 %</i>	<i>43 - 116</i>		<i>B6D0544</i>	<i>04/22/2016</i>	<i>04/22/16 21:38</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID MW-29

Lab ID: 1601446-07

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,1,1-Trichloroethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,1,2-Trichloroethane	1.1	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,1-Dichloroethane	3.3	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,1-Dichloroethene	340	5.0	10	B6D0673	04/28/2016	04/28/16 13:18	
1,1-Dichloropropene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,2,3-Trichloropropane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,2,3-Trichlorobenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,2,4-Trichlorobenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,2,4-Trimethylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,2-Dibromoethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,2-Dichlorobenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,2-Dichloroethane	0.64	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,2-Dichloropropane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,3,5-Trimethylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,3-Dichlorobenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,3-Dichloropropane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
1,4-Dichlorobenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
2,2-Dichloropropane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
2-Chlorotoluene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
4-Chlorotoluene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
4-Isopropyltoluene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Benzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Bromobenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Bromodichloromethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Bromoform	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Bromomethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Carbon tetrachloride	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Chlorobenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Chloroethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Chloroform	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Chloromethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
cis-1,2-Dichloroethene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
cis-1,3-Dichloropropene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Dibromochloromethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main GETS Mid Monthly Sam

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 04/29/2016

Client Sample ID MW-29

Lab ID: 1601446-07

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Dichlorodifluoromethane	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Ethylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Hexachlorobutadiene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Isopropylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
m,p-Xylene	ND	1.0	1	B6D0633	04/27/2016	04/27/16 11:28	
Methylene chloride	ND	1.0	1	B6D0633	04/27/2016	04/27/16 11:28	
n-Butylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
n-Propylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Naphthalene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
o-Xylene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
sec-Butylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Styrene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
tert-Butylbenzene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Tetrachloroethene	0.94	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Toluene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
trans-1,2-Dichloroethene	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Trichloroethene	2.7	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Trichlorofluoromethane	0.96	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
Vinyl chloride	ND	0.50	1	B6D0633	04/27/2016	04/27/16 11:28	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.0 %</i>	<i>51 - 157</i>		B6D0673	04/28/2016	<i>04/28/16 13:18</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>94.6 %</i>	<i>51 - 157</i>		B6D0633	04/27/2016	<i>04/27/16 11:28</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>101 %</i>	<i>61 - 123</i>		B6D0673	04/28/2016	<i>04/28/16 13:18</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.6 %</i>	<i>61 - 123</i>		B6D0633	04/27/2016	<i>04/27/16 11:28</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>	<i>57 - 147</i>		B6D0673	04/28/2016	<i>04/28/16 13:18</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>98.4 %</i>	<i>57 - 147</i>		B6D0633	04/27/2016	<i>04/27/16 11:28</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6D0633	04/27/2016	<i>04/27/16 11:28</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6D0673	04/28/2016	<i>04/28/16 13:18</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 04/29/2016

Client Sample ID MW-29

Lab ID: 1601446-07

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	94	2.0	1	B6D0544	04/22/2016	04/22/16 22:05	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>61.2 %</i>	<i>42 - 106</i>		B6D0544	04/22/2016	<i>04/22/16 22:05</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>70.6 %</i>	<i>55 - 117</i>		B6D0544	04/22/2016	<i>04/22/16 22:05</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>90.6 %</i>	<i>52 - 142</i>		B6D0544	04/22/2016	<i>04/22/16 22:05</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>66.3 %</i>	<i>43 - 116</i>		B6D0544	04/22/2016	<i>04/22/16 22:05</i>	



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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
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Batch B6D0629 - MSVOA_LL_W

Blank (B6D0629-BLK1)

Prepared: 4/26/2016 Analyzed: 4/26/2016

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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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
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Batch B6D0629 - MSVOA_LL_W (continued)

Blank (B6D0629-BLK1) - Continued

Prepared: 4/26/2016 Analyzed: 4/26/2016

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				
<hr/>									
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>24.45</i>		<i>25.0000</i>		<i>97.8</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>25.40</i>		<i>25.0000</i>		<i>102</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.26</i>		<i>25.0000</i>		<i>97.0</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.63</i>		<i>25.0000</i>		<i>103</i>	<i>61 - 119</i>			

LCS (B6D0629-BS1)

Prepared: 4/26/2016 Analyzed: 4/26/2016

1,1,1,2-Tetrachloroethane	21.2900	0.50	20.0000		106	76 - 132			
1,1,1-Trichloroethane	22.6200	0.50	20.0000		113	72 - 144			
1,1,2,2-Tetrachloroethane	17.6300	0.50	20.0000		88.2	70 - 120			
1,1,2-Trichloroethane	18.0600	0.50	20.0000		90.3	75 - 120			
1,1-Dichloroethane	21.5000	0.50	20.0000		108	65 - 127			
1,1-Dichloroethene	21.6500	0.50	20.0000		108	63 - 142			
1,1-Dichloropropene	22.4800	0.50	20.0000		112	78 - 137			
1,2,3-Trichloropropane	17.3500	0.50	20.0000		86.8	73 - 118			
1,2,3-Trichlorobenzene	19.2200	0.50	20.0000		96.1	53 - 164			
1,2,4-Trichlorobenzene	19.7300	0.50	20.0000		98.6	58 - 144			
1,2,4-Trimethylbenzene	21.9400	0.50	20.0000		110	75 - 140			
1,2-Dibromo-3-chloropropane	15.9900	0.50	20.0000		80.0	61 - 131			
1,2-Dibromoethane	18.1700	0.50	20.0000		90.8	74 - 125			
1,2-Dichlorobenzene	19.8800	0.50	20.0000		99.4	78 - 122			
1,2-Dichloroethane	18.6900	0.50	20.0000		93.4	70 - 126			
1,2-Dichloropropane	19.5500	0.50	20.0000		97.8	69 - 120			
1,3,5-Trimethylbenzene	22.4200	0.50	20.0000		112	73 - 145			



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Reported : 04/29/2016

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
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Batch B6D0629 - MSVOA_LL_W (continued)

LCS (B6D0629-BS1) - Continued

Prepared: 4/26/2016 Analyzed: 4/26/2016

1,3-Dichlorobenzene	20.3100	0.50	20.0000		102	76 - 126			
1,3-Dichloropropane	18.1700	0.50	20.0000		90.8	76 - 117			
1,4-Dichlorobenzene	20.1600	0.50	20.0000		101	77 - 120			
2,2-Dichloropropane	24.3000	0.50	20.0000		122	47 - 169			
2-Chlorotoluene	21.1300	0.50	20.0000		106	75 - 135			
4-Chlorotoluene	21.2700	0.50	20.0000		106	70 - 133			
4-Isopropyltoluene	23.1600	0.50	20.0000		116	72 - 153			
Benzene	40.8500	0.50	40.0000		102	73 - 123			
Bromobenzene	19.5100	0.50	20.0000		97.6	75 - 121			
Bromodichloromethane	19.8700	0.50	20.0000		99.4	73 - 124			
Bromoform	17.5400	0.50	20.0000		87.7	70 - 135			
Bromomethane	25.4000	0.50	20.0000		127	10 - 166			
Carbon tetrachloride	24.8100	0.50	20.0000		124	65 - 171			
Chlorobenzene	20.0000	0.50	20.0000		100	80 - 121			
Chloroethane	21.0400	0.50	20.0000		105	55 - 143			
Chloroform	20.3500	0.50	20.0000		102	65 - 130			
Chloromethane	20.6700	0.50	20.0000		103	21 - 141			
cis-1,2-Dichloroethene	20.3200	0.50	20.0000		102	64 - 126			
cis-1,3-Dichloropropene	22.0600	0.50	20.0000		110	70 - 131			
Dibromochloromethane	20.2600	0.50	20.0000		101	74 - 125			
Dibromomethane	18.3700	0.50	20.0000		91.8	74 - 116			
Dichlorodifluoromethane	23.6900	0.50	20.0000		118	40 - 186			
Ethylbenzene	40.9000	0.50	40.0000		102	77 - 130			
Hexachlorobutadiene	22.0400	0.50	20.0000		110	52 - 176			
Isopropylbenzene	24.1100	0.50	20.0000		121	77 - 144			
m,p-Xylene	43.4000	1.0	40.0000		108	84 - 136			
Methylene chloride	16.6100	1.0	20.0000		83.0	72 - 150			
n-Butylbenzene	23.2200	0.50	20.0000		116	73 - 154			
n-Propylbenzene	22.8700	0.50	20.0000		114	77 - 145			
Naphthalene	19.2700	0.50	20.0000		96.4	55 - 137			
o-Xylene	41.9000	0.50	40.0000		105	79 - 135			
sec-Butylbenzene	23.2300	0.50	20.0000		116	73 - 157			
Styrene	21.1600	0.50	20.0000		106	78 - 125			
tert-Butylbenzene	22.7500	0.50	20.0000		114	78 - 149			
Tetrachloroethene	20.8200	0.50	20.0000		104	74 - 136			
Toluene	41.2800	0.50	40.0000		103	78 - 124			
trans-1,2-Dichloroethene	20.6200	0.50	20.0000		103	66 - 131			
Trichloroethene	20.2500	0.50	20.0000		101	78 - 128			
Trichlorofluoromethane	23.5400	0.50	20.0000		118	60 - 170			
Vinyl chloride	21.9200	0.50	20.0000		110	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	24.19		25.0000		96.8	51 - 157			



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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 Limit	Notes
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Batch B6D0629 - MSVOA_LL_W (continued)

LCS (B6D0629-BS1) - Continued

Prepared: 4/26/2016 Analyzed: 4/26/2016

Surrogate: 4-Bromofluorobenzene	25.56	25.0000	102	61 - 123
Surrogate: Dibromofluoromethane	24.78	25.0000	99.1	57 - 147
Surrogate: Toluene-d8	25.35	25.0000	101	61 - 119

LCS Dup (B6D0629-BSD1)

Prepared: 4/26/2016 Analyzed: 4/26/2016

1,1,1,2-Tetrachloroethane	21.7400	0.50	20.0000	109	76 - 132	2.09	20
1,1,1-Trichloroethane	22.3400	0.50	20.0000	112	72 - 144	1.25	20
1,1,2,2-Tetrachloroethane	18.7600	0.50	20.0000	93.8	70 - 120	6.21	20
1,1,2-Trichloroethane	18.6300	0.50	20.0000	93.2	75 - 120	3.11	20
1,1-Dichloroethane	21.2600	0.50	20.0000	106	65 - 127	1.12	20
1,1-Dichloroethene	21.1700	0.50	20.0000	106	63 - 142	2.24	20
1,1-Dichloropropene	22.2000	0.50	20.0000	111	78 - 137	1.25	20
1,2,3-Trichloropropane	18.9700	0.50	20.0000	94.8	73 - 118	8.92	20
1,2,3-Trichlorobenzene	19.3400	0.50	20.0000	96.7	53 - 164	0.622	20
1,2,4-Trichlorobenzene	19.7000	0.50	20.0000	98.5	58 - 144	0.152	20
1,2,4-Trimethylbenzene	21.9000	0.50	20.0000	110	75 - 140	0.182	20
1,2-Dibromo-3-chloropropane	17.7500	0.50	20.0000	88.8	61 - 131	10.4	20
1,2-Dibromoethane	19.6100	0.50	20.0000	98.0	74 - 125	7.62	20
1,2-Dichlorobenzene	20.0900	0.50	20.0000	100	78 - 122	1.05	20
1,2-Dichloroethane	19.2700	0.50	20.0000	96.4	70 - 126	3.06	20
1,2-Dichloropropane	19.5100	0.50	20.0000	97.6	69 - 120	0.205	20
1,3,5-Trimethylbenzene	22.3200	0.50	20.0000	112	73 - 145	0.447	20
1,3-Dichlorobenzene	20.1900	0.50	20.0000	101	76 - 126	0.593	20
1,3-Dichloropropane	18.9000	0.50	20.0000	94.5	76 - 117	3.94	20
1,4-Dichlorobenzene	20.0700	0.50	20.0000	100	77 - 120	0.447	20
2,2-Dichloropropane	23.5400	0.50	20.0000	118	47 - 169	3.18	20
2-Chlorotoluene	21.2400	0.50	20.0000	106	75 - 135	0.519	20
4-Chlorotoluene	21.2000	0.50	20.0000	106	70 - 133	0.330	20
4-Isopropyltoluene	22.7100	0.50	20.0000	114	72 - 153	1.96	20
Benzene	40.9100	0.50	40.0000	102	73 - 123	0.147	20
Bromobenzene	19.9900	0.50	20.0000	100	75 - 121	2.43	20
Bromodichloromethane	19.9500	0.50	20.0000	99.8	73 - 124	0.402	20
Bromoform	18.6000	0.50	20.0000	93.0	70 - 135	5.87	20
Bromomethane	23.9900	0.50	20.0000	120	10 - 166	5.71	20
Carbon tetrachloride	23.8100	0.50	20.0000	119	65 - 171	4.11	20
Chlorobenzene	20.2000	0.50	20.0000	101	80 - 121	0.995	20
Chloroethane	20.1100	0.50	20.0000	101	55 - 143	4.52	20
Chloroform	20.3200	0.50	20.0000	102	65 - 130	0.148	20
Chloromethane	19.5200	0.50	20.0000	97.6	21 - 141	5.72	20
cis-1,2-Dichloroethene	20.0700	0.50	20.0000	100	64 - 126	1.24	20
cis-1,3-Dichloropropene	22.8800	0.50	20.0000	114	70 - 131	3.65	20
Dibromochloromethane	20.6300	0.50	20.0000	103	74 - 125	1.81	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
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Batch B6D0629 - MSVOA_LL_W (continued)

LCS Dup (B6D0629-BSD1) - Continued

Prepared: 4/26/2016 Analyzed: 4/26/2016

Dibromomethane	19.0000	0.50	20.0000		95.0	74 - 116	3.37	20	
Dichlorodifluoromethane	22.7900	0.50	20.0000		114	40 - 186	3.87	20	
Ethylbenzene	40.0600	0.50	40.0000		100	77 - 130	2.08	20	
Hexachlorobutadiene	21.4300	0.50	20.0000		107	52 - 176	2.81	20	
Isopropylbenzene	24.1900	0.50	20.0000		121	77 - 144	0.331	20	
m,p-Xylene	42.8500	1.0	40.0000		107	84 - 136	1.28	20	
Methylene chloride	16.2500	1.0	20.0000		81.2	72 - 150	2.19	20	
n-Butylbenzene	22.4900	0.50	20.0000		112	73 - 154	3.19	20	
n-Propylbenzene	22.5200	0.50	20.0000		113	77 - 145	1.54	20	
Naphthalene	20.4400	0.50	20.0000		102	55 - 137	5.89	20	
o-Xylene	41.3000	0.50	40.0000		103	79 - 135	1.44	20	
sec-Butylbenzene	22.8300	0.50	20.0000		114	73 - 157	1.74	20	
Styrene	21.2300	0.50	20.0000		106	78 - 125	0.330	20	
tert-Butylbenzene	22.6500	0.50	20.0000		113	78 - 149	0.441	20	
Tetrachloroethene	21.1200	0.50	20.0000		106	74 - 136	1.43	20	
Toluene	40.9900	0.50	40.0000		102	78 - 124	0.705	20	
trans-1,2-Dichloroethene	20.3700	0.50	20.0000		102	66 - 131	1.22	20	
Trichloroethene	20.6200	0.50	20.0000		103	78 - 128	1.81	20	
Trichlorofluoromethane	22.6400	0.50	20.0000		113	60 - 170	3.90	20	
Vinyl chloride	20.9800	0.50	20.0000		105	55 - 148	4.38	20	
<hr/>									
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>24.52</i>		<i>25.0000</i>		<i>98.1</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>25.27</i>		<i>25.0000</i>		<i>101</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.15</i>		<i>25.0000</i>		<i>96.6</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.35</i>		<i>25.0000</i>		<i>101</i>	<i>61 - 119</i>			



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Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	Limits Limits	RPD RPD	RPD Limit	Notes
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Batch B6D0633 - MSVOA_LL_W

Blank (B6D0633-BLK1)

Prepared: 4/27/2016 Analyzed: 4/27/2016

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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Hargis & Associates, Inc.

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Report To : Steve Netto

Reported : 04/29/2016

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
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Batch B6D0633 - MSVOA_LL_W (continued)

Blank (B6D0633-BLK1) - Continued

Prepared: 4/27/2016 Analyzed: 4/27/2016

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				
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<i>Surrogate: 1,2-Dichloroethane-d4</i>	23.38		25.0000		93.5	51 - 157			
<i>Surrogate: 4-Bromofluorobenzene</i>	24.89		25.0000		99.6	61 - 123			
<i>Surrogate: Dibromofluoromethane</i>	23.68		25.0000		94.7	57 - 147			
<i>Surrogate: Toluene-d8</i>	25.28		25.0000		101	61 - 119			

LCS (B6D0633-BS1)

Prepared: 4/27/2016 Analyzed: 4/27/2016

1,1,1,2-Tetrachloroethane	20.6000	0.50	20.0000		103	76 - 132			
1,1,1-Trichloroethane	20.9400	0.50	20.0000		105	72 - 144			
1,1,2,2-Tetrachloroethane	18.8900	0.50	20.0000		94.4	70 - 120			
1,1,2-Trichloroethane	17.6600	0.50	20.0000		88.3	75 - 120			
1,1-Dichloroethane	20.0600	0.50	20.0000		100	65 - 127			
1,1-Dichloroethene	20.2900	0.50	20.0000		101	63 - 142			
1,1-Dichloropropene	21.9900	0.50	20.0000		110	78 - 137			
1,2,3-Trichloropropane	17.4400	0.50	20.0000		87.2	73 - 118			
1,2,3-Trichlorobenzene	19.1100	0.50	20.0000		95.6	53 - 164			
1,2,4-Trichlorobenzene	19.5900	0.50	20.0000		98.0	58 - 144			
1,2,4-Trimethylbenzene	21.4000	0.50	20.0000		107	75 - 140			
1,2-Dibromo-3-chloropropane	15.8000	0.50	20.0000		79.0	61 - 131			
1,2-Dibromoethane	18.4900	0.50	20.0000		92.4	74 - 125			
1,2-Dichlorobenzene	19.5700	0.50	20.0000		97.8	78 - 122			
1,2-Dichloroethane	17.7000	0.50	20.0000		88.5	70 - 126			
1,2-Dichloropropane	18.9300	0.50	20.0000		94.6	69 - 120			
1,3,5-Trimethylbenzene	21.7900	0.50	20.0000		109	73 - 145			
1,3-Dichlorobenzene	19.7900	0.50	20.0000		99.0	76 - 126			
1,3-Dichloropropane	18.0600	0.50	20.0000		90.3	76 - 117			



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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
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Batch B6D0633 - MSVOA_LL_W (continued)

LCS (B6D0633-BS1) - Continued

Prepared: 4/27/2016 Analyzed: 4/27/2016

1,4-Dichlorobenzene	19.7800	0.50	20.0000		98.9	77 - 120			
2,2-Dichloropropane	21.5200	0.50	20.0000		108	47 - 169			
2-Chlorotoluene	20.8500	0.50	20.0000		104	75 - 135			
4-Chlorotoluene	20.8700	0.50	20.0000		104	70 - 133			
4-Isopropyltoluene	22.4300	0.50	20.0000		112	72 - 153			
Benzene	39.9600	0.50	40.0000		99.9	73 - 123			
Bromobenzene	19.5100	0.50	20.0000		97.6	75 - 121			
Bromodichloromethane	18.5800	0.50	20.0000		92.9	73 - 124			
Bromoform	17.1600	0.50	20.0000		85.8	70 - 135			
Bromomethane	17.8100	0.50	20.0000		89.0	10 - 166			
Carbon tetrachloride	21.4600	0.50	20.0000		107	65 - 171			
Chlorobenzene	19.8500	0.50	20.0000		99.2	80 - 121			
Chloroethane	17.1200	0.50	20.0000		85.6	55 - 143			
Chloroform	18.7700	0.50	20.0000		93.8	65 - 130			
Chloromethane	20.5300	0.50	20.0000		103	21 - 141			
cis-1,2-Dichloroethene	19.3300	0.50	20.0000		96.6	64 - 126			
cis-1,3-Dichloropropene	21.7000	0.50	20.0000		108	70 - 131			
Dibromochloromethane	19.5200	0.50	20.0000		97.6	74 - 125			
Dibromomethane	18.1700	0.50	20.0000		90.8	74 - 116			
Dichlorodifluoromethane	21.9700	0.50	20.0000		110	40 - 186			
Ethylbenzene	39.2200	0.50	40.0000		98.0	77 - 130			
Hexachlorobutadiene	21.5000	0.50	20.0000		108	52 - 176			
Isopropylbenzene	23.8100	0.50	20.0000		119	77 - 144			
m,p-Xylene	41.4400	1.0	40.0000		104	84 - 136			
Methylene chloride	15.8800	1.0	20.0000		79.4	72 - 150			
n-Butylbenzene	22.6200	0.50	20.0000		113	73 - 154			
n-Propylbenzene	22.3500	0.50	20.0000		112	77 - 145			
Naphthalene	19.4700	0.50	20.0000		97.4	55 - 137			
o-Xylene	40.0600	0.50	40.0000		100	79 - 135			
sec-Butylbenzene	22.5300	0.50	20.0000		113	73 - 157			
Styrene	20.5400	0.50	20.0000		103	78 - 125			
tert-Butylbenzene	22.3500	0.50	20.0000		112	78 - 149			
Tetrachloroethene	21.0000	0.50	20.0000		105	74 - 136			
Toluene	40.0600	0.50	40.0000		100	78 - 124			
trans-1,2-Dichloroethene	19.6800	0.50	20.0000		98.4	66 - 131			
Trichloroethene	19.4800	0.50	20.0000		97.4	78 - 128			
Trichlorofluoromethane	20.8000	0.50	20.0000		104	60 - 170			
Vinyl chloride	20.7300	0.50	20.0000		104	55 - 148			
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Surrogate: 1,2-Dichloroethane-d4	22.73		25.0000		90.9	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.28		25.0000		101	61 - 123			
Surrogate: Dibromofluoromethane	24.41		25.0000		97.6	57 - 147			



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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
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Batch B6D0633 - MSVOA_LL_W (continued)

LCS (B6D0633-BS1) - Continued

Prepared: 4/27/2016 Analyzed: 4/27/2016

<i>Surrogate: Toluene-d8</i>	25.28		25.0000		101	61 - 119			
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LCS Dup (B6D0633-BS1)

Prepared: 4/27/2016 Analyzed: 4/27/2016

1,1,1,2-Tetrachloroethane	23.8100	0.50	20.0000	119	76 - 132	14.5	20	
1,1,1-Trichloroethane	23.9900	0.50	20.0000	120	72 - 144	13.6	20	
1,1,2,2-Tetrachloroethane	22.6400	0.50	20.0000	113	70 - 120	18.1	20	
1,1,2-Trichloroethane	20.8700	0.50	20.0000	104	75 - 120	16.7	20	
1,1-Dichloroethane	22.5300	0.50	20.0000	113	65 - 127	11.6	20	
1,1-Dichloroethene	23.5100	0.50	20.0000	118	63 - 142	14.7	20	
1,1-Dichloropropene	24.8800	0.50	20.0000	124	78 - 137	12.3	20	
1,2,3-Trichloropropane	21.0700	0.50	20.0000	105	73 - 118	18.9	20	
1,2,3-Trichlorobenzene	21.6500	0.50	20.0000	108	53 - 164	12.5	20	
1,2,4-Trichlorobenzene	21.9800	0.50	20.0000	110	58 - 144	11.5	20	
1,2,4-Trimethylbenzene	23.9800	0.50	20.0000	120	75 - 140	11.4	20	
1,2-Dibromo-3-chloropropane	19.6200	0.50	20.0000	98.1	61 - 131	21.6	20	R
1,2-Dibromoethane	22.0500	0.50	20.0000	110	74 - 125	17.6	20	
1,2-Dichlorobenzene	22.4500	0.50	20.0000	112	78 - 122	13.7	20	
1,2-Dichloroethane	20.6500	0.50	20.0000	103	70 - 126	15.4	20	
1,2-Dichloropropane	21.7200	0.50	20.0000	109	69 - 120	13.7	20	
1,3,5-Trimethylbenzene	24.6100	0.50	20.0000	123	73 - 145	12.2	20	
1,3-Dichlorobenzene	22.4200	0.50	20.0000	112	76 - 126	12.5	20	
1,3-Dichloropropane	21.3400	0.50	20.0000	107	76 - 117	16.6	20	
1,4-Dichlorobenzene	22.4700	0.50	20.0000	112	77 - 120	12.7	20	
2,2-Dichloropropane	24.4500	0.50	20.0000	122	47 - 169	12.7	20	
2-Chlorotoluene	23.3700	0.50	20.0000	117	75 - 135	11.4	20	
4-Chlorotoluene	23.3300	0.50	20.0000	117	70 - 133	11.1	20	
4-Isopropyltoluene	24.9900	0.50	20.0000	125	72 - 153	10.8	20	
Benzene	45.1500	0.50	40.0000	113	73 - 123	12.2	20	
Bromobenzene	22.2000	0.50	20.0000	111	75 - 121	12.9	20	
Bromodichloromethane	21.3300	0.50	20.0000	107	73 - 124	13.8	20	
Bromoform	20.2300	0.50	20.0000	101	70 - 135	16.4	20	
Bromomethane	20.9400	0.50	20.0000	105	10 - 166	16.2	20	
Carbon tetrachloride	24.1800	0.50	20.0000	121	65 - 171	11.9	20	
Chlorobenzene	22.4800	0.50	20.0000	112	80 - 121	12.4	20	
Chloroethane	19.3500	0.50	20.0000	96.8	55 - 143	12.2	20	
Chloroform	21.2600	0.50	20.0000	106	65 - 130	12.4	20	
Chloromethane	22.4300	0.50	20.0000	112	21 - 141	8.85	20	
cis-1,2-Dichloroethene	21.7600	0.50	20.0000	109	64 - 126	11.8	20	
cis-1,3-Dichloropropene	25.1300	0.50	20.0000	126	70 - 131	14.6	20	
Dibromochloromethane	22.8000	0.50	20.0000	114	74 - 125	15.5	20	
Dibromomethane	21.1500	0.50	20.0000	106	74 - 116	15.2	20	
Dichlorodifluoromethane	24.6100	0.50	20.0000	123	40 - 186	11.3	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
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Batch B6D0633 - MSVOA_LL_W (continued)

LCS Dup (B6D0633-BSD1) - Continued

Prepared: 4/27/2016 Analyzed: 4/27/2016

Ethylbenzene	43.6000	0.50	40.0000		109	77 - 130	10.6	20	
Hexachlorobutadiene	23.9200	0.50	20.0000		120	52 - 176	10.7	20	
Isopropylbenzene	26.6700	0.50	20.0000		133	77 - 144	11.3	20	
m,p-Xylene	46.3300	1.0	40.0000		116	84 - 136	11.1	20	
Methylene chloride	18.0000	1.0	20.0000		90.0	72 - 150	12.5	20	
n-Butylbenzene	25.0400	0.50	20.0000		125	73 - 154	10.2	20	
n-Propylbenzene	24.8200	0.50	20.0000		124	77 - 145	10.5	20	
Naphthalene	22.8400	0.50	20.0000		114	55 - 137	15.9	20	
o-Xylene	44.9000	0.50	40.0000		112	79 - 135	11.4	20	
sec-Butylbenzene	25.3100	0.50	20.0000		127	73 - 157	11.6	20	
Styrene	23.4400	0.50	20.0000		117	78 - 125	13.2	20	
tert-Butylbenzene	25.1000	0.50	20.0000		126	78 - 149	11.6	20	
Tetrachloroethene	24.0500	0.50	20.0000		120	74 - 136	13.5	20	
Toluene	44.9300	0.50	40.0000		112	78 - 124	11.5	20	
trans-1,2-Dichloroethene	22.3300	0.50	20.0000		112	66 - 131	12.6	20	
Trichloroethene	22.4600	0.50	20.0000		112	78 - 128	14.2	20	
Trichlorofluoromethane	23.2500	0.50	20.0000		116	60 - 170	11.1	20	
Vinyl chloride	23.0600	0.50	20.0000		115	55 - 148	10.6	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>22.77</i>		<i>25.0000</i>		<i>91.1</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.33</i>		<i>25.0000</i>		<i>97.3</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.06</i>		<i>25.0000</i>		<i>96.2</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>24.42</i>		<i>25.0000</i>		<i>97.7</i>	<i>61 - 119</i>			

Duplicate (B6D0633-DUP1)

Source: 1601440-10

Prepared: 4/27/2016 Analyzed: 4/27/2016

1,1,1,2-Tetrachloroethane	ND	0.50		ND	NR			20	
1,1,1-Trichloroethane	ND	0.50		ND	NR			20	
1,1,2,2-Tetrachloroethane	ND	0.50		ND	NR			20	
1,1,2-Trichloroethane	ND	0.50		ND	NR			20	
1,1-Dichloroethane	ND	0.50		ND	NR			20	
1,1-Dichloroethene	ND	0.50		ND	NR			20	
1,1-Dichloropropene	ND	0.50		ND	NR			20	
1,2,3-Trichloropropane	ND	0.50		ND	NR			20	
1,2,3-Trichlorobenzene	ND	0.50		ND	NR			20	
1,2,4-Trichlorobenzene	ND	0.50		ND	NR			20	
1,2,4-Trimethylbenzene	ND	0.50		ND	NR			20	
1,2-Dibromo-3-chloropropane	ND	0.50		ND	NR			20	
1,2-Dibromoethane	ND	0.50		ND	NR			20	
1,2-Dichlorobenzene	ND	0.50		ND	NR			20	
1,2-Dichloroethane	ND	0.50		ND	NR			20	
1,2-Dichloropropane	ND	0.50		ND	NR			20	
1,3,5-Trimethylbenzene	ND	0.50		ND	NR			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	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B6D0633 - MSVOA_LL_W (continued)

Duplicate (B6D0633-DUP1) - Continued

Source: 1601440-10

Prepared: 4/27/2016 Analyzed: 4/27/2016

1,3-Dichlorobenzene	ND	0.50		ND	NR			20	
1,3-Dichloropropane	ND	0.50		ND	NR			20	
1,4-Dichlorobenzene	ND	0.50		ND	NR			20	
2,2-Dichloropropane	ND	0.50		ND	NR			20	
2-Chlorotoluene	ND	0.50		ND	NR			20	
4-Chlorotoluene	ND	0.50		ND	NR			20	
4-Isopropyltoluene	ND	0.50		ND	NR			20	
Benzene	ND	0.50		ND	NR			20	
Bromobenzene	ND	0.50		ND	NR			20	
Bromodichloromethane	0.460000	0.50		0.500000	NR		8.33	20	
Bromoform	ND	0.50		ND	NR			20	
Bromomethane	ND	0.50		ND	NR			20	
Carbon tetrachloride	ND	0.50		ND	NR			20	
Chlorobenzene	ND	0.50		ND	NR			20	
Chloroethane	ND	0.50		ND	NR			20	
Chloroform	3.860000	0.50		3.860000	NR		0.00	20	
Chloromethane	ND	0.50		ND	NR			20	
cis-1,2-Dichloroethene	ND	0.50		ND	NR			20	
cis-1,3-Dichloropropene	ND	0.50		ND	NR			20	
Dibromochloromethane	ND	0.50		ND	NR			20	
Dibromomethane	ND	0.50		ND	NR			20	
Dichlorodifluoromethane	ND	0.50		ND	NR			20	
Ethylbenzene	ND	0.50		ND	NR			20	
Hexachlorobutadiene	ND	0.50		ND	NR			20	
Isopropylbenzene	ND	0.50		ND	NR			20	
m,p-Xylene	ND	1.0		ND	NR			20	
Methylene chloride	ND	1.0		ND	NR			20	
n-Butylbenzene	ND	0.50		ND	NR			20	
n-Propylbenzene	ND	0.50		ND	NR			20	
Naphthalene	ND	0.50		ND	NR			20	
o-Xylene	ND	0.50		ND	NR			20	
sec-Butylbenzene	ND	0.50		ND	NR			20	
Styrene	ND	0.50		ND	NR			20	
tert-Butylbenzene	ND	0.50		ND	NR			20	
Tetrachloroethene	ND	0.50		ND	NR			20	
Toluene	ND	0.50		ND	NR			20	
trans-1,2-Dichloroethene	ND	0.50		ND	NR			20	
Trichloroethene	ND	0.50		ND	NR			20	
Trichlorofluoromethane	ND	0.50		ND	NR			20	
Vinyl chloride	ND	0.50		ND	NR			20	

Surrogate: 1,2-Dichloroethane-d4

23.67

25.0000

94.7

51 - 157



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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
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Batch B6D0633 - MSVOA_LL_W (continued)

Duplicate (B6D0633-DUP1) - Continued

Source: 1601440-10

Prepared: 4/27/2016 Analyzed: 4/27/2016

Surrogate: 4-Bromofluorobenzene	24.92		25.0000		99.7	61 - 123			
Surrogate: Dibromofluoromethane	24.69		25.0000		98.8	57 - 147			
Surrogate: Toluene-d8	25.20		25.0000		101	61 - 119			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 04/29/2016

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	Limits Limits	RPD RPD	RPD Limit	Notes
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Batch B6D0673 - MSVOA_LL_W

Blank (B6D0673-BLK1)

Prepared: 4/28/2016 Analyzed: 4/28/2016

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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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
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Batch B6D0673 - MSVOA_LL_W (continued)

Blank (B6D0673-BLK1) - Continued

Prepared: 4/28/2016 Analyzed: 4/28/2016

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				

<i>Surrogate: 1,2-Dichloroethane-d4</i>	23.92		25.0000		95.7	51 - 157			
<i>Surrogate: 4-Bromofluorobenzene</i>	24.94		25.0000		99.8	61 - 123			
<i>Surrogate: Dibromofluoromethane</i>	24.69		25.0000		98.8	57 - 147			
<i>Surrogate: Toluene-d8</i>	25.47		25.0000		102	61 - 119			

LCS (B6D0673-BS1)

Prepared: 4/28/2016 Analyzed: 4/28/2016

1,1,1,2-Tetrachloroethane	24.5700	0.50	20.0000		123	76 - 132			
1,1,1-Trichloroethane	25.0000	0.50	20.0000		125	72 - 144			
1,1,2,2-Tetrachloroethane	23.7800	0.50	20.0000		119	70 - 120			
1,1,2-Trichloroethane	21.9400	0.50	20.0000		110	75 - 120			
1,1-Dichloroethane	23.7700	0.50	20.0000		119	65 - 127			
1,1-Dichloroethene	23.9800	0.50	20.0000		120	63 - 142			
1,1-Dichloropropene	25.1800	0.50	20.0000		126	78 - 137			
1,2,3-Trichloropropane	21.8500	0.50	20.0000		109	73 - 118			
1,2,3-Trichlorobenzene	22.3300	0.50	20.0000		112	53 - 164			
1,2,4-Trichlorobenzene	22.5100	0.50	20.0000		113	58 - 144			
1,2,4-Trimethylbenzene	24.2500	0.50	20.0000		121	75 - 140			
1,2-Dibromo-3-chloropropane	19.4100	0.50	20.0000		97.0	61 - 131			
1,2-Dibromoethane	22.8900	0.50	20.0000		114	74 - 125			
1,2-Dichlorobenzene	22.9300	0.50	20.0000		115	78 - 122			
1,2-Dichloroethane	22.0400	0.50	20.0000		110	70 - 126			
1,2-Dichloropropane	22.0700	0.50	20.0000		110	69 - 120			
1,3,5-Trimethylbenzene	24.9400	0.50	20.0000		125	73 - 145			
1,3-Dichlorobenzene	22.9100	0.50	20.0000		115	76 - 126			
1,3-Dichloropropane	21.5800	0.50	20.0000		108	76 - 117			



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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
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Batch B6D0673 - MSVOA_LL_W (continued)

LCS (B6D0673-BS1) - Continued

Prepared: 4/28/2016 Analyzed: 4/28/2016

1,4-Dichlorobenzene	23.0000	0.50	20.0000		115	77 - 120			
2,2-Dichloropropane	25.8100	0.50	20.0000		129	47 - 169			
2-Chlorotoluene	23.7000	0.50	20.0000		118	75 - 135			
4-Chlorotoluene	23.6400	0.50	20.0000		118	70 - 133			
4-Isopropyltoluene	25.4100	0.50	20.0000		127	72 - 153			
Benzene	46.5000	0.50	40.0000		116	73 - 123			
Bromobenzene	22.4700	0.50	20.0000		112	75 - 121			
Bromodichloromethane	22.5500	0.50	20.0000		113	73 - 124			
Bromoform	21.0800	0.50	20.0000		105	70 - 135			
Bromomethane	22.2800	0.50	20.0000		111	10 - 166			
Carbon tetrachloride	25.9000	0.50	20.0000		130	65 - 171			
Chlorobenzene	23.1100	0.50	20.0000		116	80 - 121			
Chloroethane	20.6800	0.50	20.0000		103	55 - 143			
Chloroform	22.6700	0.50	20.0000		113	65 - 130			
Chloromethane	25.5400	0.50	20.0000		128	21 - 141			
cis-1,2-Dichloroethene	22.6800	0.50	20.0000		113	64 - 126			
cis-1,3-Dichloropropene	25.8100	0.50	20.0000		129	70 - 131			
Dibromochloromethane	23.2200	0.50	20.0000		116	74 - 125			
Dibromomethane	22.3800	0.50	20.0000		112	74 - 116			
Dichlorodifluoromethane	25.9900	0.50	20.0000		130	40 - 186			
Ethylbenzene	45.6600	0.50	40.0000		114	77 - 130			
Hexachlorobutadiene	24.0800	0.50	20.0000		120	52 - 176			
Isopropylbenzene	26.6700	0.50	20.0000		133	77 - 144			
m,p-Xylene	48.4600	1.0	40.0000		121	84 - 136			
Methylene chloride	18.5900	1.0	20.0000		93.0	72 - 150			
n-Butylbenzene	25.2100	0.50	20.0000		126	73 - 154			
n-Propylbenzene	25.2300	0.50	20.0000		126	77 - 145			
Naphthalene	22.9900	0.50	20.0000		115	55 - 137			
o-Xylene	46.8800	0.50	40.0000		117	79 - 135			
sec-Butylbenzene	25.6200	0.50	20.0000		128	73 - 157			
Styrene	24.1900	0.50	20.0000		121	78 - 125			
tert-Butylbenzene	25.2800	0.50	20.0000		126	78 - 149			
Tetrachloroethene	23.7100	0.50	20.0000		119	74 - 136			
Toluene	47.4600	0.50	40.0000		119	78 - 124			
trans-1,2-Dichloroethene	22.9500	0.50	20.0000		115	66 - 131			
Trichloroethene	22.5800	0.50	20.0000		113	78 - 128			
Trichlorofluoromethane	25.0600	0.50	20.0000		125	60 - 170			
Vinyl chloride	23.7600	0.50	20.0000		119	55 - 148			
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Surrogate: 1,2-Dichloroethane-d4	24.76		25.0000		99.0	51 - 157			
Surrogate: 4-Bromofluorobenzene	24.97		25.0000		99.9	61 - 123			
Surrogate: Dibromofluoromethane	25.27		25.0000		101	57 - 147			



Certificate of Analysis

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Reported : 04/29/2016

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
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Batch B6D0673 - MSVOA_LL_W (continued)

LCS (B6D0673-BS1) - Continued

Prepared: 4/28/2016 Analyzed: 4/28/2016

Surrogate: Toluene-d8 25.54 25.0000

102 61 - 119

LCS Dup (B6D0673-BS1)

Prepared: 4/28/2016 Analyzed: 4/28/2016

1,1,1,2-Tetrachloroethane	23.4400	0.50	20.0000	117	76 - 132	4.71	20
1,1,1-Trichloroethane	23.7700	0.50	20.0000	119	72 - 144	5.04	20
1,1,2,2-Tetrachloroethane	22.5400	0.50	20.0000	113	70 - 120	5.35	20
1,1,2-Trichloroethane	20.9500	0.50	20.0000	105	75 - 120	4.62	20
1,1-Dichloroethane	22.9400	0.50	20.0000	115	65 - 127	3.55	20
1,1-Dichloroethene	23.1700	0.50	20.0000	116	63 - 142	3.44	20
1,1-Dichloropropene	24.0600	0.50	20.0000	120	78 - 137	4.55	20
1,2,3-Trichloropropane	20.5000	0.50	20.0000	102	73 - 118	6.38	20
1,2,3-Trichlorobenzene	21.4400	0.50	20.0000	107	53 - 164	4.07	20
1,2,4-Trichlorobenzene	21.6700	0.50	20.0000	108	58 - 144	3.80	20
1,2,4-Trimethylbenzene	23.2800	0.50	20.0000	116	75 - 140	4.08	20
1,2-Dibromo-3-chloropropane	18.7300	0.50	20.0000	93.6	61 - 131	3.57	20
1,2-Dibromoethane	21.7300	0.50	20.0000	109	74 - 125	5.20	20
1,2-Dichlorobenzene	21.7800	0.50	20.0000	109	78 - 122	5.14	20
1,2-Dichloroethane	20.7700	0.50	20.0000	104	70 - 126	5.93	20
1,2-Dichloropropane	21.0600	0.50	20.0000	105	69 - 120	4.68	20
1,3,5-Trimethylbenzene	23.8400	0.50	20.0000	119	73 - 145	4.51	20
1,3-Dichlorobenzene	22.0100	0.50	20.0000	110	76 - 126	4.01	20
1,3-Dichloropropane	20.7000	0.50	20.0000	104	76 - 117	4.16	20
1,4-Dichlorobenzene	21.8700	0.50	20.0000	109	77 - 120	5.04	20
2,2-Dichloropropane	24.7100	0.50	20.0000	124	47 - 169	4.35	20
2-Chlorotoluene	22.5200	0.50	20.0000	113	75 - 135	5.11	20
4-Chlorotoluene	22.5600	0.50	20.0000	113	70 - 133	4.68	20
4-Isopropyltoluene	24.4000	0.50	20.0000	122	72 - 153	4.06	20
Benzene	44.5600	0.50	40.0000	111	73 - 123	4.26	20
Bromobenzene	21.4400	0.50	20.0000	107	75 - 121	4.69	20
Bromodichloromethane	21.6400	0.50	20.0000	108	73 - 124	4.12	20
Bromoform	19.6200	0.50	20.0000	98.1	70 - 135	7.17	20
Bromomethane	21.2100	0.50	20.0000	106	10 - 166	4.92	20
Carbon tetrachloride	25.5400	0.50	20.0000	128	65 - 171	1.40	20
Chlorobenzene	22.1100	0.50	20.0000	111	80 - 121	4.42	20
Chloroethane	20.6100	0.50	20.0000	103	55 - 143	0.339	20
Chloroform	21.6800	0.50	20.0000	108	65 - 130	4.46	20
Chloromethane	24.3500	0.50	20.0000	122	21 - 141	4.77	20
cis-1,2-Dichloroethene	21.6200	0.50	20.0000	108	64 - 126	4.79	20
cis-1,3-Dichloropropene	24.6900	0.50	20.0000	123	70 - 131	4.44	20
Dibromochloromethane	22.2500	0.50	20.0000	111	74 - 125	4.27	20
Dibromomethane	20.8600	0.50	20.0000	104	74 - 116	7.03	20
Dichlorodifluoromethane	24.7600	0.50	20.0000	124	40 - 186	4.85	20



Certificate of Analysis

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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
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Batch B6D0673 - MSVOA_LL_W (continued)

LCS Dup (B6D0673-BSD1) - Continued

Prepared: 4/28/2016 Analyzed: 4/28/2016

Ethylbenzene	43.9500	0.50	40.0000		110	77 - 130	3.82	20	
Hexachlorobutadiene	23.1600	0.50	20.0000		116	52 - 176	3.90	20	
Isopropylbenzene	25.5700	0.50	20.0000		128	77 - 144	4.21	20	
m,p-Xylene	46.4500	1.0	40.0000		116	84 - 136	4.24	20	
Methylene chloride	17.7100	1.0	20.0000		88.6	72 - 150	4.85	20	
n-Butylbenzene	24.2500	0.50	20.0000		121	73 - 154	3.88	20	
n-Propylbenzene	24.1600	0.50	20.0000		121	77 - 145	4.33	20	
Naphthalene	21.9900	0.50	20.0000		110	55 - 137	4.45	20	
o-Xylene	44.8100	0.50	40.0000		112	79 - 135	4.52	20	
sec-Butylbenzene	24.4100	0.50	20.0000		122	73 - 157	4.84	20	
Styrene	23.0600	0.50	20.0000		115	78 - 125	4.78	20	
tert-Butylbenzene	24.1400	0.50	20.0000		121	78 - 149	4.61	20	
Tetrachloroethene	22.5700	0.50	20.0000		113	74 - 136	4.93	20	
Toluene	45.1900	0.50	40.0000		113	78 - 124	4.90	20	
trans-1,2-Dichloroethene	22.1300	0.50	20.0000		111	66 - 131	3.64	20	
Trichloroethene	21.4500	0.50	20.0000		107	78 - 128	5.13	20	
Trichlorofluoromethane	24.0200	0.50	20.0000		120	60 - 170	4.24	20	
Vinyl chloride	23.2100	0.50	20.0000		116	55 - 148	2.34	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>24.35</i>		<i>25.0000</i>		<i>97.4</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.96</i>		<i>25.0000</i>		<i>99.8</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>25.29</i>		<i>25.0000</i>		<i>101</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.50</i>		<i>25.0000</i>		<i>102</i>	<i>61 - 119</i>			



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Project Number : Raytheon Main GETS Mid Monthly Sampl

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

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B6D0544 - MSSEMI_W

Blank (B6D0544-BLK1)

Prepared: 4/22/2016 Analyzed: 4/22/2016

1,4-Dioxane	ND	2.0			NR				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	55.60		100.000		55.6	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	68.63		100.000		68.6	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	89.83		100.000		89.8	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	61.50		100.000		61.5	43 - 116			

LCS (B6D0544-BS1)

Prepared: 4/22/2016 Analyzed: 4/22/2016

1,4-Dioxane	98.2400	2.0	100.000		98.2	62 - 127			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	61.50		100.000		61.5	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	76.68		100.000		76.7	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	86.80		100.000		86.8	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	68.49		100.000		68.5	43 - 116			

LCS Dup (B6D0544-BSD1)

Prepared: 4/22/2016 Analyzed: 4/22/2016

1,4-Dioxane	103.530	2.0	100.000		104	62 - 127	5.24	20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	62.00		100.000		62.0	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	74.24		100.000		74.2	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	82.52		100.000		82.5	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	71.05		100.000		71.0	43 - 116			



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Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 04/29/2016

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	RPD Limit	Notes
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Batch B6D0536 - MSSEMI_W

Blank (B6D0536-BLK1)

Prepared: 4/22/2016 Analyzed: 4/22/2016

1,4-Dioxane	ND	0.20			NR				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.7634		1.00000		76.3	31 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.8233		1.00000		82.3	28 - 122			
<i>Surrogate: 4-Terphenyl-d14</i>	0.8448		1.00000		84.5	43 - 131			
<i>Surrogate: Nitrobenzene-d5</i>	0.7630		1.00000		76.3	20 - 119			

LCS (B6D0536-BS1)

Prepared: 4/22/2016 Analyzed: 4/22/2016

1,4-Dioxane	1.28593	0.20	1.00000		129	49 - 169			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.8522		1.00000		85.2	31 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.9248		1.00000		92.5	28 - 122			
<i>Surrogate: 4-Terphenyl-d14</i>	0.8139		1.00000		81.4	43 - 131			
<i>Surrogate: Nitrobenzene-d5</i>	0.8490		1.00000		84.9	20 - 119			

Matrix Spike (B6D0536-MS1)

Source: 1601444-03

Prepared: 4/22/2016 Analyzed: 4/22/2016

1,4-Dioxane	237.494	0.20	1.00000	187.174	5030	49 - 169			E4, M2
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.7488		1.00000		74.9	31 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.8387		1.00000		83.9	28 - 122			
<i>Surrogate: 4-Terphenyl-d14</i>	0.7834		1.00000		78.3	43 - 131			
<i>Surrogate: Nitrobenzene-d5</i>	0.7456		1.00000		74.6	20 - 119			

Matrix Spike Dup (B6D0536-MSD1)

Source: 1601444-03

Prepared: 4/22/2016 Analyzed: 4/22/2016

1,4-Dioxane	228.940	0.20	1.00000	187.174	4180	49 - 169	3.67	20	E4, M2
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.7394		1.00000		73.9	31 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.8407		1.00000		84.1	28 - 122			
<i>Surrogate: 4-Terphenyl-d14</i>	0.7511		1.00000		75.1	43 - 131			
<i>Surrogate: Nitrobenzene-d5</i>	0.7482		1.00000		74.8	20 - 119			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 04/29/2016

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
E4	Result value is estimated.
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: Raytheon Main GETS Mid Monthly Sample

TASK NO.: 532.15

Project Manager Steve Netto
QA Manager Kevin Fong
Phone 858.455.6500
Fax 858.455.6533

MATRIX	PRESERVATION	CONTAINERS						ANALYSIS REQUESTED							Expected Concentration Range (ppb) for VOA's				SPECIAL HANDLING																	
		Groundwater	Lab prepared water	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sodium Hydroxide (NaOH)	Sulfuric Acid (H ₂ SO ₄)	Ice	40-ml VOA	125 mL Poly	250 mL Poly	250 mL Glass	1 L Poly	1 L Amber	VOCs by EPA 8260B	Bromate by EPA 317	Bromide by EPA 300	Alkalinity by SM2320B	Total Organic Carbon by SM5310B	Total Suspended Solids by SM2540D	UV Absorption EPA 415.3 @254 nm	1,4-Dioxane by EPA 8270C MOD	1,4-Dioxane by EPA 8270C SIM	0 - 10	10 - 100	100 - 1,000	>1,000	24 hr TAT	48 hr TAT	5 Day TAT	Level IV Data Validation Requested	MS/MSD Requested				
		X	X				X	2						X										X												
		X	X				X	3					1	X									X	X												
		X	X				X	3					1	X									X	X												
		X	X				X	3					1	X									X	X												
		X	X				X	3					1	X								X				X										
		X	X				X	3					1	X								X			X											

Laboratory
Advanced Technology Laboratories
Attn: Rachelle Arada
3275 Walnut Ave
Signal Hill, CA 90755
(562) 989-4045

SAMPLED BY:		SAMPLE COLLECTION	
LAB ID	SAMPLE ID	Date	Time
1601446-1	TB-042116	4/21/2016	7:00
2	CEFF		7:30
3	CBT		7:40
4	POX		7:55
5	INF		8:10
6	EW-02		8:35
7	MW-29		9:00

Total number of containers per analysis: 20 6 Total No. of Containers: 26

Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<i>Kevin Fong</i> / HHA	4/21/16 10:40	<i>[Signature]</i>	4/21/16 10:40
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<i>[Signature]</i>	4/21/16 11:25	<i>C. Smith</i> / ATC	4/21/16 11:25

- No. of containers correct
- Received in good condition
- Custody seals secure
- Conforms to COC document

Send Results to:
Steve Netto
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122
Ph: 858.455.5400
snetto@hargis.com

- Instructions
- Fill out form completely and sign only after verified for completeness
 - Complete in ballpoint pen. Draw one line through error, initial and date correction
 - Indicate the number of sample containers in analytical request space; indicate choice with ✓ or ✗
 - Note applicable preservatives, special instructions, and deviations from typical environmental samples.
 - Consult project QA documents for specific instructions.

7.5°C Temperature on receipt

May 03, 2016

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 : 1601562
Client Reference : Raytheon Main GETS Monthly Sample, 532.15

Enclosed are the results for sample(s) received on May 02, 2016 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,



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 GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/03/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CEFF	1601562-01	Groundwater	5/02/16 11:01	5/02/16 11:05



Certificate of Analysis

Hargis & Associates, Inc.
9171 Towne Centre Drive, Suite 375
San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5
Report To : Steve Netto
Reported : 05/03/2016

Client Sample ID CEFF

Lab ID: 1601562-01

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	0.42	0.20	1	B6E0026	05/02/2016	05/02/16 16:54	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	69.0 %	31 - 106		B6E0026	05/02/2016	05/02/16 16:54	
<i>Surrogate: 2-Fluorobiphenyl</i>	80.4 %	28 - 122		B6E0026	05/02/2016	05/02/16 16:54	
<i>Surrogate: 4-Terphenyl-d14</i>	89.8 %	43 - 131		B6E0026	05/02/2016	05/02/16 16:54	
<i>Surrogate: Nitrobenzene-d5</i>	76.1 %	20 - 119		B6E0026	05/02/2016	05/02/16 16:54	

QUALITY CONTROL SECTION

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	RPD Limit	Notes
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Batch B6E0026 - MSSEMI_W

Blank (B6E0026-BLK1)

Prepared: 5/2/2016 Analyzed: 5/2/2016

1,4-Dioxane	ND	0.20		NR					
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.6483		1.00000	64.8	31 - 106				
<i>Surrogate: 2-Fluorobiphenyl</i>	0.8276		1.00000	82.8	28 - 122				
<i>Surrogate: 4-Terphenyl-d14</i>	0.8165		1.00000	81.7	43 - 131				
<i>Surrogate: Nitrobenzene-d5</i>	0.7999		1.00000	80.0	20 - 119				

LCS (B6E0026-BS1)

Prepared: 5/2/2016 Analyzed: 5/2/2016

1,4-Dioxane	1.53138	0.20	1.00000	153	49 - 169				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.6438		1.00000	64.4	31 - 106				
<i>Surrogate: 2-Fluorobiphenyl</i>	0.7797		1.00000	78.0	28 - 122				
<i>Surrogate: 4-Terphenyl-d14</i>	0.9478		1.00000	94.8	43 - 131				
<i>Surrogate: Nitrobenzene-d5</i>	0.7327		1.00000	73.3	20 - 119				

LCS Dup (B6E0026-BSD1)

Prepared: 5/2/2016 Analyzed: 5/2/2016

1,4-Dioxane	1.33913	0.20	1.00000	134	49 - 169	13.4	20		
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.6455		1.00000	64.6	31 - 106				
<i>Surrogate: 2-Fluorobiphenyl</i>	0.8300		1.00000	83.0	28 - 122				
<i>Surrogate: 4-Terphenyl-d14</i>	0.8164		1.00000	81.6	43 - 131				
<i>Surrogate: Nitrobenzene-d5</i>	0.7582		1.00000	75.8	20 - 119				



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/03/2016

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.

May 13, 2016

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 : 1601608

Client Reference : Raytheon Main GETS Mid Monthly Sample, 532.15

Enclosed are the results for sample(s) received on May 05, 2016 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,



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 GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-050516	1601608-01	Lab prepared water	5/05/16 7:00	5/05/16 10:22
CEFF	1601608-02	Groundwater	5/05/16 7:57	5/05/16 10:22
CBT	1601608-03	Groundwater	5/05/16 8:03	5/05/16 10:22
POX	1601608-04	Groundwater	5/05/16 8:23	5/05/16 10:22
INF	1601608-05	Groundwater	5/05/16 8:41	5/05/16 10:22
EW-02	1601608-06	Groundwater	5/05/16 8:57	5/05/16 10:22
MW-29	1601608-07	Groundwater	5/05/16 9:06	5/05/16 10:22
PF	1601608-08	Groundwater	5/05/16 8:35	5/05/16 10:22

CASE NARRATIVE

The sample for EPA 317 (Bromate) analysis was subcontracted to Exova, Inc. with ELAP Cert.# 2652.

Sample Receiving/General Comments:

The following analytes lists were taken from sample containers: Alkalinity - Hydroxide, Bicarbonate, Carbonate, and Total.



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID TB-050516

Lab ID: 1601608-01

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,1,1-Trichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,1,2-Trichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,1-Dichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,1-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,1-Dichloropropene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,2,3-Trichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,2-Dibromoethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,2-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,2-Dichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,2-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,3-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,3-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
1,4-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
2,2-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
2-Chlorotoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
4-Chlorotoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
4-Isopropyltoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Benzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Bromobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Bromodichloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Bromoform	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Bromomethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Carbon tetrachloride	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Chlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Chloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Chloroform	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Chloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Dibromochloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID TB-050516

Lab ID: 1601608-01

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Dichlorodifluoromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Ethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Hexachlorobutadiene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Isopropylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
m,p-Xylene	ND	1.0	1	B6E0268	05/12/2016	05/12/16 13:17	
Methylene chloride	ND	1.0	1	B6E0268	05/12/2016	05/12/16 13:17	
n-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
n-Propylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Naphthalene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
o-Xylene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
sec-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Styrene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
tert-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Tetrachloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Toluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Trichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Trichlorofluoromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
Vinyl chloride	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:17	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97.4 %</i>	<i>51 - 157</i>		B6E0268	05/12/2016	<i>05/12/16 13:17</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.9 %</i>	<i>61 - 123</i>		B6E0268	05/12/2016	<i>05/12/16 13:17</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>57 - 147</i>		B6E0268	05/12/2016	<i>05/12/16 13:17</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6E0268	05/12/2016	<i>05/12/16 13:17</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID CEFF

Lab ID: 1601608-02

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,1,1-Trichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,1,2-Trichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,1-Dichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,1-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,1-Dichloropropene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,2,3-Trichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,2-Dibromoethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,2-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,2-Dichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,2-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,3-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,3-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
1,4-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
2,2-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
2-Chlorotoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
4-Chlorotoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
4-Isopropyltoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Benzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Bromobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Bromodichloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Bromoform	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Bromomethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Carbon tetrachloride	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Chlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Chloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Chloroform	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Chloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Dibromochloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID CEFF

Lab ID: 1601608-02

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Dichlorodifluoromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Ethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Hexachlorobutadiene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Isopropylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
m,p-Xylene	ND	1.0	1	B6E0268	05/12/2016	05/12/16 13:41	
Methylene chloride	ND	1.0	1	B6E0268	05/12/2016	05/12/16 13:41	
n-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
n-Propylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Naphthalene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
o-Xylene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
sec-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Styrene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
tert-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Tetrachloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Toluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Trichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Trichlorofluoromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
Vinyl chloride	ND	0.50	1	B6E0268	05/12/2016	05/12/16 13:41	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.2 %</i>	<i>51 - 157</i>		B6E0268	05/12/2016	<i>05/12/16 13:41</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.3 %</i>	<i>61 - 123</i>		B6E0268	05/12/2016	<i>05/12/16 13:41</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>	<i>57 - 147</i>		B6E0268	05/12/2016	<i>05/12/16 13:41</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0268	05/12/2016	<i>05/12/16 13:41</i>	



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Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID CEFF

Lab ID: 1601608-02

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0219	05/10/2016	05/11/16 12:02	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>46.8 %</i>	<i>31 - 106</i>		B6E0219	05/10/2016	<i>05/11/16 12:02</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>55.2 %</i>	<i>28 - 122</i>		B6E0219	05/10/2016	<i>05/11/16 12:02</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>61.9 %</i>	<i>43 - 131</i>		B6E0219	05/10/2016	<i>05/11/16 12:02</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>42.2 %</i>	<i>20 - 119</i>		B6E0219	05/10/2016	<i>05/11/16 12:02</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID CBT

Lab ID: 1601608-03

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,1,1-Trichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,1,2-Trichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,1-Dichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,1-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,1-Dichloropropene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,2,3-Trichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,2-Dibromoethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,2-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,2-Dichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,2-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,3-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,3-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
1,4-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
2,2-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
2-Chlorotoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
4-Chlorotoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
4-Isopropyltoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Benzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Bromobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Bromodichloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Bromoform	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Bromomethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Carbon tetrachloride	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Chlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Chloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Chloroform	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Chloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Dibromochloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID CBT

Lab ID: 1601608-03

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Dichlorodifluoromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Ethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Hexachlorobutadiene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Isopropylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
m,p-Xylene	ND	1.0	1	B6E0268	05/12/2016	05/12/16 14:05	
Methylene chloride	ND	1.0	1	B6E0268	05/12/2016	05/12/16 14:05	
n-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
n-Propylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Naphthalene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
o-Xylene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
sec-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Styrene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
tert-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Tetrachloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Toluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Trichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Trichlorofluoromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
Vinyl chloride	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:05	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.4 %</i>	<i>51 - 157</i>		B6E0268	05/12/2016	<i>05/12/16 14:05</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.1 %</i>	<i>61 - 123</i>		B6E0268	05/12/2016	<i>05/12/16 14:05</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>57 - 147</i>		B6E0268	05/12/2016	<i>05/12/16 14:05</i>	
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>	<i>61 - 119</i>		B6E0268	05/12/2016	<i>05/12/16 14:05</i>	



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Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID CBT

Lab ID: 1601608-03

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0219	05/10/2016	05/11/16 12:29	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>59.2 %</i>	<i>31 - 106</i>		B6E0219	05/10/2016	<i>05/11/16 12:29</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>66.7 %</i>	<i>28 - 122</i>		B6E0219	05/10/2016	<i>05/11/16 12:29</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>62.4 %</i>	<i>43 - 131</i>		B6E0219	05/10/2016	<i>05/11/16 12:29</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>52.4 %</i>	<i>20 - 119</i>		B6E0219	05/10/2016	<i>05/11/16 12:29</i>	



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Reported : 05/13/2016

Client Sample ID POX

Lab ID: 1601608-04

Alkalinity, Speciated by SM 2320B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO ₃)	240	5.0	1	B6E0140	05/06/2016	05/06/16 12:15	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B6E0140	05/06/2016	05/06/16 12:15	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B6E0140	05/06/2016	05/06/16 12:15	
Alkalinity, Total (as CaCO ₃)	240	5.0	1	B6E0140	05/06/2016	05/06/16 12:15	

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	ND	3.0	1	B6E0209	05/06/2016	05/06/16 13:33	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,1,1-Trichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,1,2-Trichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,1-Dichloroethane	0.68	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,1-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,1-Dichloropropene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,2,3-Trichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,2-Dibromoethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,2-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,2-Dichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,2-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,3-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,3-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
1,4-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
2,2-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
2-Chlorotoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	



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Reported : 05/13/2016

Client Sample ID POX

Lab ID: 1601608-04

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
4-Isopropyltoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Benzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Bromobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Bromodichloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Bromoform	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Bromomethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Carbon tetrachloride	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Chlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Chloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Chloroform	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Chloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Dibromochloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Dibromomethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Dichlorodifluoromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Ethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Hexachlorobutadiene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Isopropylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
m,p-Xylene	ND	1.0	1	B6E0268	05/12/2016	05/12/16 14:29	
Methylene chloride	ND	1.0	1	B6E0268	05/12/2016	05/12/16 14:29	
n-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
n-Propylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Naphthalene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
o-Xylene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
sec-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Styrene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
tert-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Tetrachloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Toluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Trichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Trichlorofluoromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Vinyl chloride	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:29	
Surrogate: 1,2-Dichloroethane-d4	99.3 %	51 - 157		B6E0268	05/12/2016	05/12/16 14:29	
Surrogate: 4-Bromofluorobenzene	93.4 %	61 - 123		B6E0268	05/12/2016	05/12/16 14:29	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID POX

Lab ID: 1601608-04

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: Dibromofluoromethane	107 %	57 - 147		B6E0268	05/12/2016	05/12/16 14:29	
Surrogate: Toluene-d8	99.9 %	61 - 119		B6E0268	05/12/2016	05/12/16 14:29	

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0219	05/10/2016	05/11/16 12:57	
Surrogate: 1,2-Dichlorobenzene-d4	65.7 %	31 - 106		B6E0219	05/10/2016	05/11/16 12:57	
Surrogate: 2-Fluorobiphenyl	76.6 %	28 - 122		B6E0219	05/10/2016	05/11/16 12:57	
Surrogate: 4-Terphenyl-d14	66.8 %	43 - 131		B6E0219	05/10/2016	05/11/16 12:57	
Surrogate: Nitrobenzene-d5	54.6 %	20 - 119		B6E0219	05/10/2016	05/11/16 12:57	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID INF

Lab ID: 1601608-05

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	B6E0151	05/06/2016	05/06/16 16:21	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,1,1-Trichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,1,2-Trichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,1-Dichloroethane	1.0	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,1-Dichloroethene	97	5.0	10	B6E0268	05/12/2016	05/12/16 16:05	
1,1-Dichloropropene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,2,3-Trichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,2-Dibromoethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,2-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,2-Dichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,2-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,3-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,3-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
1,4-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
2,2-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
2-Chlorotoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
4-Chlorotoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
4-Isopropyltoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Benzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Bromobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Bromodichloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Bromoform	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Bromomethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Carbon tetrachloride	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Chlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main GETS Mid Monthly Sam

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/13/2016

Client Sample ID INF

Lab ID: 1601608-05

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Chloroform	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Chloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Dibromochloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Dibromomethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Dichlorodifluoromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Ethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Hexachlorobutadiene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Isopropylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
m,p-Xylene	ND	1.0	1	B6E0268	05/12/2016	05/12/16 15:17	
Methylene chloride	ND	1.0	1	B6E0268	05/12/2016	05/12/16 15:17	
n-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
n-Propylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Naphthalene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
o-Xylene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
sec-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Styrene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
tert-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Tetrachloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Toluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Trichloroethene	0.67	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Trichlorofluoromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
Vinyl chloride	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:17	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.7 %</i>	<i>51 - 157</i>		B6E0268	05/12/2016	<i>05/12/16 16:05</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>100 %</i>	<i>51 - 157</i>		B6E0268	05/12/2016	<i>05/12/16 15:17</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.4 %</i>	<i>61 - 123</i>		B6E0268	05/12/2016	<i>05/12/16 16:05</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.8 %</i>	<i>61 - 123</i>		B6E0268	05/12/2016	<i>05/12/16 15:17</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>109 %</i>	<i>57 - 147</i>		B6E0268	05/12/2016	<i>05/12/16 15:17</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>107 %</i>	<i>57 - 147</i>		B6E0268	05/12/2016	<i>05/12/16 16:05</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.1 %</i>	<i>61 - 119</i>		B6E0268	05/12/2016	<i>05/12/16 16:05</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6E0268	05/12/2016	<i>05/12/16 15:17</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID INF

Lab ID: 1601608-05

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	37	2.0	1	B6E0141	05/06/2016	05/10/16 02:20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>59.0 %</i>	<i>42 - 106</i>		<i>B6E0141</i>	<i>05/06/2016</i>	<i>05/10/16 02:20</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>67.3 %</i>	<i>55 - 117</i>		<i>B6E0141</i>	<i>05/06/2016</i>	<i>05/10/16 02:20</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>123 %</i>	<i>52 - 142</i>		<i>B6E0141</i>	<i>05/06/2016</i>	<i>05/10/16 02:20</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>64.1 %</i>	<i>43 - 116</i>		<i>B6E0141</i>	<i>05/06/2016</i>	<i>05/10/16 02:20</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID EW-02

Lab ID: 1601608-06

Bromide by Ion Chromatography EPA 300

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.22	0.05	1	B6E0151	05/06/2016	05/06/16 16:33	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,1,1-Trichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,1,2-Trichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,1-Dichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,1-Dichloroethene	36	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,1-Dichloropropene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,2,3-Trichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,2-Dibromoethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,2-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,2-Dichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,2-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,3-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,3-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
1,4-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
2,2-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
2-Chlorotoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
4-Chlorotoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
4-Isopropyltoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Benzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Bromobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Bromodichloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Bromoform	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Bromomethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Carbon tetrachloride	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Chlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID EW-02

Lab ID: 1601608-06

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Chloroform	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Chloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Dibromochloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Dibromomethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Dichlorodifluoromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Ethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Hexachlorobutadiene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Isopropylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
m,p-Xylene	ND	1.0	1	B6E0268	05/12/2016	05/12/16 14:53	
Methylene chloride	ND	1.0	1	B6E0268	05/12/2016	05/12/16 14:53	
n-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
n-Propylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Naphthalene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
o-Xylene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
sec-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Styrene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
tert-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Tetrachloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Toluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Trichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Trichlorofluoromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
Vinyl chloride	ND	0.50	1	B6E0268	05/12/2016	05/12/16 14:53	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>100 %</i>	<i>51 - 157</i>		B6E0268	05/12/2016	<i>05/12/16 14:53</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.6 %</i>	<i>61 - 123</i>		B6E0268	05/12/2016	<i>05/12/16 14:53</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>109 %</i>	<i>57 - 147</i>		B6E0268	05/12/2016	<i>05/12/16 14:53</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0268	05/12/2016	<i>05/12/16 14:53</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID EW-02

Lab ID: 1601608-06

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	15	2.0	1	B6E0141	05/06/2016	05/10/16 02:46	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>62.1 %</i>	<i>42 - 106</i>		B6E0141	05/06/2016	<i>05/10/16 02:46</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>69.0 %</i>	<i>55 - 117</i>		B6E0141	05/06/2016	<i>05/10/16 02:46</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>125 %</i>	<i>52 - 142</i>		B6E0141	05/06/2016	<i>05/10/16 02:46</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>65.3 %</i>	<i>43 - 116</i>		B6E0141	05/06/2016	<i>05/10/16 02:46</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID MW-29

Lab ID: 1601608-07

Bromide by Ion Chromatography EPA 300

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.43	0.05	1	B6E0151	05/06/2016	05/06/16 16:44	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,1,1-Trichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,1,2-Trichloroethane	1.2	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,1-Dichloroethane	3.6	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,1-Dichloroethene	380	5.0	10	B6E0268	05/12/2016	05/12/16 16:29	
1,1-Dichloropropene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,2,3-Trichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,2-Dibromoethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,2-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,2-Dichloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,2-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,3-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,3-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
1,4-Dichlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
2,2-Dichloropropane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
2-Chlorotoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
4-Chlorotoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
4-Isopropyltoluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Benzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Bromobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Bromodichloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Bromoform	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Bromomethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Carbon tetrachloride	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Chlorobenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID MW-29

Lab ID: 1601608-07

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Chloroform	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Chloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Dibromochloromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Dibromomethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Dichlorodifluoromethane	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Ethylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Hexachlorobutadiene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Isopropylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
m,p-Xylene	ND	1.0	1	B6E0268	05/12/2016	05/12/16 15:41	
Methylene chloride	ND	1.0	1	B6E0268	05/12/2016	05/12/16 15:41	
n-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
n-Propylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Naphthalene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
o-Xylene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
sec-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Styrene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
tert-Butylbenzene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Tetrachloroethene	0.96	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Toluene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Trichloroethene	2.6	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Trichlorofluoromethane	1.0	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
Vinyl chloride	ND	0.50	1	B6E0268	05/12/2016	05/12/16 15:41	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>102 %</i>	<i>51 - 157</i>		B6E0268	05/12/2016	<i>05/12/16 16:29</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>	<i>51 - 157</i>		B6E0268	05/12/2016	<i>05/12/16 15:41</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.0 %</i>	<i>61 - 123</i>		B6E0268	05/12/2016	<i>05/12/16 16:29</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.8 %</i>	<i>61 - 123</i>		B6E0268	05/12/2016	<i>05/12/16 15:41</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>	<i>57 - 147</i>		B6E0268	05/12/2016	<i>05/12/16 15:41</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>109 %</i>	<i>57 - 147</i>		B6E0268	05/12/2016	<i>05/12/16 16:29</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0268	05/12/2016	<i>05/12/16 15:41</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0268	05/12/2016	<i>05/12/16 16:29</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

Client Sample ID MW-29

Lab ID: 1601608-07

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	94	2.0	1	B6E0141	05/06/2016	05/10/16 03:14	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>51.6 %</i>	<i>42 - 106</i>		B6E0141	05/06/2016	<i>05/10/16 03:14</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>60.9 %</i>	<i>55 - 117</i>		B6E0141	05/06/2016	<i>05/10/16 03:14</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>105 %</i>	<i>52 - 142</i>		B6E0141	05/06/2016	<i>05/10/16 03:14</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>54.8 %</i>	<i>43 - 116</i>		B6E0141	05/06/2016	<i>05/10/16 03:14</i>	



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Hargis & Associates, Inc.
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Project Number : Raytheon Main GETS Mid Monthly Sam
 Report To : Steve Netto
 Reported : 05/13/2016

Client Sample ID PF
Lab ID: 1601608-08

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	B6E0223	05/06/2016	05/06/16 10:00	

Alkalinity, Speciated by SM 2320B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO₃)	230	5.0	1	B6E0140	05/06/2016	05/06/16 12:15	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B6E0140	05/06/2016	05/06/16 12:15	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B6E0140	05/06/2016	05/06/16 12:15	
Alkalinity, Total (as CaCO₃)	230	5.0	1	B6E0140	05/06/2016	05/06/16 12:15	

Total Suspended Solids (Residue, Non-Filtrable) by SM 2540D

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	ND	1.0	1	B6E0199	05/09/2016	05/09/16 16:30	

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	ND	3.0	1	B6E0209	05/06/2016	05/06/16 13:52	



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Hargis & Associates, Inc.
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 San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl
 Report To : Steve Netto
 Reported : 05/13/2016

QUALITY CONTROL SECTION

Alkalinity, Speciated by SM 2320B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B6E0140 - No_Prep_WC1_W

Blank (B6E0140-BLK1)

Prepared: 5/6/2016 Analyzed: 5/6/2016

Alkalinity, Bicarbonate (as CaCO3)	ND	5.0			NR			
Alkalinity, Carbonate (as CaCO3)	ND	5.0			NR			
Alkalinity, Hydroxide (as CaCO3)	ND	5.0			NR			
Alkalinity, Total (as CaCO3)	ND	5.0			NR			

LCS (B6E0140-BS1)

Prepared: 5/6/2016 Analyzed: 5/6/2016

Alkalinity, Total (as CaCO3)	100.210	5.0	99.9580		100	80 - 120		
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Duplicate (B6E0140-DUP1)

Source: 1601608-08

Prepared: 5/6/2016 Analyzed: 5/6/2016

Alkalinity, Total (as CaCO3)	232.070	5.0		225.740	NR		2.77	20
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Matrix Spike (B6E0140-MS1)

Source: 1601608-08

Prepared: 5/6/2016 Analyzed: 5/6/2016

Alkalinity, Total (as CaCO3)	334.390	5.0	99.9580	225.740	109	80 - 120		
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Matrix Spike Dup (B6E0140-MSD1)

Source: 1601608-08

Prepared: 5/6/2016 Analyzed: 5/6/2016

Alkalinity, Total (as CaCO3)	325.950	5.0	99.9580	225.740	100	80 - 120	2.56	20
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San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

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
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Batch B6E0199 - No_Prep_WC1_W

Blank (B6E0199-BLK1)

Prepared: 5/9/2016 Analyzed: 5/9/2016

Residue, Suspended

ND

1.0

NR

LCS (B6E0199-BS1)

Prepared: 5/9/2016 Analyzed: 5/9/2016

Residue, Suspended

90.0000

10

92.1000

97.7

80 - 120

Duplicate (B6E0199-DUP1)

Source: 1601619-01

Prepared: 5/9/2016 Analyzed: 5/9/2016

Residue, Suspended

122.000

5.0

117.500

NR

3.76

10



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San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

Bromide by Ion Chromatography EPA 300 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B6E0151 - No_Prep_IC1_W

Blank (B6E0151-BLK1)

Prepared: 5/6/2016 Analyzed: 5/6/2016

Bromide	ND	0.05			NR			
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LCS (B6E0151-BS1)

Prepared: 5/6/2016 Analyzed: 5/6/2016

Bromide	1.05860	0.05	1.00000		106	90 - 110		
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Duplicate (B6E0151-DUP1)

Source: 1601278-11

Prepared: 5/6/2016 Analyzed: 5/6/2016

Bromide	ND	0.05		0.0641	NR			20
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Matrix Spike (B6E0151-MS1)

Source: 1601278-11

Prepared: 5/6/2016 Analyzed: 5/6/2016

Bromide	2.81330	0.05	2.50000	0.0641	110	80 - 120		
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Matrix Spike Dup (B6E0151-MSD1)

Source: 1601278-11

Prepared: 5/6/2016 Analyzed: 5/6/2016

Bromide	2.80640	0.05	2.50000	0.0641	110	80 - 120	0.246	20
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San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

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
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Batch B6E0223 - No_Prep_II_W

Blank (B6E0223-BLK1)

Prepared: 5/6/2016 Analyzed: 5/6/2016

UV Absorption

ND

0.01

NR

Duplicate (B6E0223-DUP1)

Source: 1601608-08

Prepared: 5/6/2016 Analyzed: 5/6/2016

UV Absorption

ND

0.01

ND

NR

20



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San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

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
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Batch B6E0209 - No_Prep_II_W

Blank (B6E0209-BLK1)

Prepared: 5/6/2016 Analyzed: 5/6/2016

Organic Carbon, Total

ND

3.0

NR

LCS (B6E0209-BS1)

Prepared: 5/6/2016 Analyzed: 5/6/2016

Organic Carbon, Total

17.6800

3.0

20.0000

88.4

80 - 120

LCS Dup (B6E0209-BSD1)

Prepared: 5/6/2016 Analyzed: 5/6/2016

Organic Carbon, Total

16.1600

3.0

20.0000

80.8

80 - 120

8.98

20



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San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	Limits Limits	RPD RPD	RPD Limit	Notes
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Batch B6E0268 - MSVOA_LL_W

Blank (B6E0268-BLK1)

Prepared: 5/12/2016 Analyzed: 5/12/2016

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



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

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
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Batch B6E0268 - MSVOA_LL_W (continued)

Blank (B6E0268-BLK1) - Continued

Prepared: 5/12/2016 Analyzed: 5/12/2016

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				

<i>Surrogate: 1,2-Dichloroethane-d4</i>	23.47		25.0000		93.9	51 - 157			
<i>Surrogate: 4-Bromofluorobenzene</i>	23.52		25.0000		94.1	61 - 123			
<i>Surrogate: Dibromofluoromethane</i>	25.24		25.0000		101	57 - 147			
<i>Surrogate: Toluene-d8</i>	24.63		25.0000		98.5	61 - 119			

LCS (B6E0268-BS1)

Prepared: 5/12/2016 Analyzed: 5/12/2016

1,1,1,2-Tetrachloroethane	24.8400	0.50	20.0000		124	76 - 132			
1,1,1-Trichloroethane	22.1800	0.50	20.0000		111	72 - 144			
1,1,2,2-Tetrachloroethane	23.7400	0.50	20.0000		119	70 - 120			
1,1,2-Trichloroethane	20.4000	0.50	20.0000		102	75 - 120			
1,1-Dichloroethane	20.7800	0.50	20.0000		104	65 - 127			
1,1-Dichloroethene	20.8800	0.50	20.0000		104	63 - 142			
1,1-Dichloropropene	22.9600	0.50	20.0000		115	78 - 137			
1,2,3-Trichloropropane	20.5400	0.50	20.0000		103	73 - 118			
1,2,3-Trichlorobenzene	21.3300	0.50	20.0000		107	53 - 164			
1,2,4-Trichlorobenzene	21.9000	0.50	20.0000		110	58 - 144			
1,2,4-Trimethylbenzene	23.0200	0.50	20.0000		115	75 - 140			
1,2-Dibromo-3-chloropropane	17.6000	0.50	20.0000		88.0	61 - 131			
1,2-Dibromoethane	20.9300	0.50	20.0000		105	74 - 125			
1,2-Dichlorobenzene	22.7800	0.50	20.0000		114	78 - 122			
1,2-Dichloroethane	19.3200	0.50	20.0000		96.6	70 - 126			
1,2-Dichloropropane	19.9700	0.50	20.0000		99.8	69 - 120			
1,3,5-Trimethylbenzene	24.1100	0.50	20.0000		121	73 - 145			
1,3-Dichlorobenzene	23.5100	0.50	20.0000		118	76 - 126			
1,3-Dichloropropane	19.8100	0.50	20.0000		99.0	76 - 117			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

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
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Batch B6E0268 - MSVOA_LL_W (continued)

LCS (B6E0268-BS1) - Continued

Prepared: 5/12/2016 Analyzed: 5/12/2016

1,4-Dichlorobenzene	23.3100	0.50	20.0000		117	77 - 120			
2,2-Dichloropropane	23.7600	0.50	20.0000		119	47 - 169			
2-Chlorotoluene	23.2900	0.50	20.0000		116	75 - 135			
4-Chlorotoluene	23.3400	0.50	20.0000		117	70 - 133			
4-Isopropyltoluene	24.1200	0.50	20.0000		121	72 - 153			
Benzene	43.2700	0.50	40.0000		108	73 - 123			
Bromobenzene	22.7500	0.50	20.0000		114	75 - 121			
Bromodichloromethane	20.9200	0.50	20.0000		105	73 - 124			
Bromoform	20.4600	0.50	20.0000		102	70 - 135			
Bromomethane	26.0000	0.50	20.0000		130	10 - 166			
Carbon tetrachloride	22.4300	0.50	20.0000		112	65 - 171			
Chlorobenzene	22.1400	0.50	20.0000		111	80 - 121			
Chloroethane	18.3000	0.50	20.0000		91.5	55 - 143			
Chloroform	19.7000	0.50	20.0000		98.5	65 - 130			
Chloromethane	18.9200	0.50	20.0000		94.6	21 - 141			
cis-1,2-Dichloroethene	20.3200	0.50	20.0000		102	64 - 126			
cis-1,3-Dichloropropene	24.9800	0.50	20.0000		125	70 - 131			
Dibromochloromethane	22.7200	0.50	20.0000		114	74 - 125			
Dibromomethane	19.4300	0.50	20.0000		97.2	74 - 116			
Dichlorodifluoromethane	17.8000	0.50	20.0000		89.0	40 - 186			
Ethylbenzene	42.9700	0.50	40.0000		107	77 - 130			
Hexachlorobutadiene	22.5100	0.50	20.0000		113	52 - 176			
Isopropylbenzene	25.8700	0.50	20.0000		129	77 - 144			
m,p-Xylene	45.1800	1.0	40.0000		113	84 - 136			
Methylene chloride	16.8000	1.0	20.0000		84.0	72 - 150			
n-Butylbenzene	23.4500	0.50	20.0000		117	73 - 154			
n-Propylbenzene	24.4100	0.50	20.0000		122	77 - 145			
Naphthalene	20.2700	0.50	20.0000		101	55 - 137			
o-Xylene	43.8900	0.50	40.0000		110	79 - 135			
sec-Butylbenzene	24.4700	0.50	20.0000		122	73 - 157			
Styrene	22.4500	0.50	20.0000		112	78 - 125			
tert-Butylbenzene	24.4100	0.50	20.0000		122	78 - 149			
Tetrachloroethene	22.8600	0.50	20.0000		114	74 - 136			
Toluene	44.1800	0.50	40.0000		110	78 - 124			
trans-1,2-Dichloroethene	20.7300	0.50	20.0000		104	66 - 131			
Trichloroethene	20.4500	0.50	20.0000		102	78 - 128			
Trichlorofluoromethane	19.8400	0.50	20.0000		99.2	60 - 170			
Vinyl chloride	18.8100	0.50	20.0000		94.0	55 - 148			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>21.32</i>		<i>25.0000</i>		<i>85.3</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.05</i>		<i>25.0000</i>		<i>96.2</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>23.84</i>		<i>25.0000</i>		<i>95.4</i>	<i>57 - 147</i>			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

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
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Batch B6E0268 - MSVOA_LL_W (continued)

LCS (B6E0268-BS1) - Continued

Prepared: 5/12/2016 Analyzed: 5/12/2016

Surrogate: Toluene-d8 25.54 25.0000

102 61 - 119

LCS Dup (B6E0268-BSD1)

Prepared: 5/12/2016 Analyzed: 5/12/2016

1,1,1,2-Tetrachloroethane	25.5300	0.50	20.0000	128	76 - 132	2.74	20	
1,1,1-Trichloroethane	22.8300	0.50	20.0000	114	72 - 144	2.89	20	
1,1,2,2-Tetrachloroethane	25.5100	0.50	20.0000	128	70 - 120	7.19	20	L4
1,1,2-Trichloroethane	21.4400	0.50	20.0000	107	75 - 120	4.97	20	
1,1-Dichloroethane	21.5500	0.50	20.0000	108	65 - 127	3.64	20	
1,1-Dichloroethene	21.1300	0.50	20.0000	106	63 - 142	1.19	20	
1,1-Dichloropropene	23.2700	0.50	20.0000	116	78 - 137	1.34	20	
1,2,3-Trichloropropane	22.1500	0.50	20.0000	111	73 - 118	7.54	20	
1,2,3-Trichlorobenzene	21.8300	0.50	20.0000	109	53 - 164	2.32	20	
1,2,4-Trichlorobenzene	22.0700	0.50	20.0000	110	58 - 144	0.773	20	
1,2,4-Trimethylbenzene	23.3400	0.50	20.0000	117	75 - 140	1.38	20	
1,2-Dibromo-3-chloropropane	19.8400	0.50	20.0000	99.2	61 - 131	12.0	20	
1,2-Dibromoethane	22.4500	0.50	20.0000	112	74 - 125	7.01	20	
1,2-Dichlorobenzene	23.3400	0.50	20.0000	117	78 - 122	2.43	20	
1,2-Dichloroethane	20.1100	0.50	20.0000	101	70 - 126	4.01	20	
1,2-Dichloropropane	20.6800	0.50	20.0000	103	69 - 120	3.49	20	
1,3,5-Trimethylbenzene	24.1700	0.50	20.0000	121	73 - 145	0.249	20	
1,3-Dichlorobenzene	23.3500	0.50	20.0000	117	76 - 126	0.683	20	
1,3-Dichloropropane	21.1900	0.50	20.0000	106	76 - 117	6.73	20	
1,4-Dichlorobenzene	23.4800	0.50	20.0000	117	77 - 120	0.727	20	
2,2-Dichloropropane	24.0800	0.50	20.0000	120	47 - 169	1.34	20	
2-Chlorotoluene	23.4900	0.50	20.0000	117	75 - 135	0.855	20	
4-Chlorotoluene	23.3200	0.50	20.0000	117	70 - 133	0.0857	20	
4-Isopropyltoluene	24.1900	0.50	20.0000	121	72 - 153	0.290	20	
Benzene	44.1800	0.50	40.0000	110	73 - 123	2.08	20	
Bromobenzene	23.3600	0.50	20.0000	117	75 - 121	2.65	20	
Bromodichloromethane	21.4300	0.50	20.0000	107	73 - 124	2.41	20	
Bromoform	21.9700	0.50	20.0000	110	70 - 135	7.12	20	
Bromomethane	29.2100	0.50	20.0000	146	10 - 166	11.6	20	
Carbon tetrachloride	22.4700	0.50	20.0000	112	65 - 171	0.178	20	
Chlorobenzene	22.7600	0.50	20.0000	114	80 - 121	2.76	20	
Chloroethane	19.0100	0.50	20.0000	95.0	55 - 143	3.81	20	
Chloroform	20.5100	0.50	20.0000	103	65 - 130	4.03	20	
Chloromethane	18.8100	0.50	20.0000	94.0	21 - 141	0.583	20	
cis-1,2-Dichloroethene	21.1200	0.50	20.0000	106	64 - 126	3.86	20	
cis-1,3-Dichloropropene	25.2300	0.50	20.0000	126	70 - 131	0.996	20	
Dibromochloromethane	23.7700	0.50	20.0000	119	74 - 125	4.52	20	
Dibromomethane	20.5900	0.50	20.0000	103	74 - 116	5.80	20	
Dichlorodifluoromethane	17.6300	0.50	20.0000	88.2	40 - 186	0.960	20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 05/13/2016

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
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Batch B6E0268 - MSVOA_LL_W (continued)

LCS Dup (B6E0268-BSD1) - Continued

Prepared: 5/12/2016 Analyzed: 5/12/2016

Ethylbenzene	43.6100	0.50	40.0000		109	77 - 130	1.48	20	
Hexachlorobutadiene	22.4800	0.50	20.0000		112	52 - 176	0.133	20	
Isopropylbenzene	26.1200	0.50	20.0000		131	77 - 144	0.962	20	
m,p-Xylene	45.7800	1.0	40.0000		114	84 - 136	1.32	20	
Methylene chloride	17.0200	1.0	20.0000		85.1	72 - 150	1.30	20	
n-Butylbenzene	23.1900	0.50	20.0000		116	73 - 154	1.11	20	
n-Propylbenzene	24.2400	0.50	20.0000		121	77 - 145	0.699	20	
Naphthalene	21.8700	0.50	20.0000		109	55 - 137	7.59	20	
o-Xylene	44.6600	0.50	40.0000		112	79 - 135	1.74	20	
sec-Butylbenzene	24.5400	0.50	20.0000		123	73 - 157	0.286	20	
Styrene	23.1800	0.50	20.0000		116	78 - 125	3.20	20	
tert-Butylbenzene	24.7900	0.50	20.0000		124	78 - 149	1.54	20	
Tetrachloroethene	23.2200	0.50	20.0000		116	74 - 136	1.56	20	
Toluene	44.9600	0.50	40.0000		112	78 - 124	1.75	20	
trans-1,2-Dichloroethene	21.0600	0.50	20.0000		105	66 - 131	1.58	20	
Trichloroethene	20.8200	0.50	20.0000		104	78 - 128	1.79	20	
Trichlorofluoromethane	17.8700	0.50	20.0000		89.4	60 - 170	10.4	20	
Vinyl chloride	18.5100	0.50	20.0000		92.6	55 - 148	1.61	20	
<hr/>									
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>22.11</i>		<i>25.0000</i>		<i>88.4</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>23.70</i>		<i>25.0000</i>		<i>94.8</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>23.75</i>		<i>25.0000</i>		<i>95.0</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>24.97</i>		<i>25.0000</i>		<i>99.9</i>	<i>61 - 119</i>			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 05/13/2016

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

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B6E0141 - MSSEMI_W

Blank (B6E0141-BLK1)

Prepared: 5/6/2016 Analyzed: 5/6/2016

1,4-Dioxane	ND	2.0			NR				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	67.58		100.000		67.6	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	79.90		100.000		79.9	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	101.4		100.000		101	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	63.00		100.000		63.0	43 - 116			

LCS (B6E0141-BS1)

Prepared: 5/6/2016 Analyzed: 5/6/2016

1,4-Dioxane	94.7400	2.0	100.000		94.7	62 - 127			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	60.28		100.000		60.3	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	71.39		100.000		71.4	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	84.57		100.000		84.6	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	57.61		100.000		57.6	43 - 116			

Matrix Spike (B6E0141-MS1)

Source: 1601592-02

Prepared: 5/6/2016 Analyzed: 5/6/2016

1,4-Dioxane	259.650	2.0	100.000	215.200	44.4	62 - 127			M1
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	64.37		100.000		64.4	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	78.26		100.000		78.3	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	87.45		100.000		87.4	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	61.65		100.000		61.6	43 - 116			

Matrix Spike Dup (B6E0141-MSD1)

Source: 1601592-02

Prepared: 5/6/2016 Analyzed: 5/6/2016

1,4-Dioxane	294.790	2.0	100.000	215.200	79.6	62 - 127	12.7	20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	63.86		100.000		63.9	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	73.37		100.000		73.4	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	91.31		100.000		91.3	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	60.33		100.000		60.3	43 - 116			



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sampl

Report To : Steve Netto

Reported : 05/13/2016

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
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Batch B6E0219 - MSSEMI_W

Blank (B6E0219-BLK1)

Prepared: 5/10/2016 Analyzed: 5/11/2016

1,4-Dioxane	ND	0.20			NR				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>0.6610</i>		<i>1.00000</i>		<i>66.1</i>	<i>31 - 106</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>0.7751</i>		<i>1.00000</i>		<i>77.5</i>	<i>28 - 122</i>			
<i>Surrogate: 4-Terphenyl-d14</i>	<i>0.7695</i>		<i>1.00000</i>		<i>77.0</i>	<i>43 - 131</i>			
<i>Surrogate: Nitrobenzene-d5</i>	<i>0.5889</i>		<i>1.00000</i>		<i>58.9</i>	<i>20 - 119</i>			

LCS (B6E0219-BS1)

Prepared: 5/10/2016 Analyzed: 5/11/2016

1,4-Dioxane	1.24027	0.20	1.00000		124	49 - 169			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>0.6094</i>		<i>1.00000</i>		<i>60.9</i>	<i>31 - 106</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>0.6721</i>		<i>1.00000</i>		<i>67.2</i>	<i>28 - 122</i>			
<i>Surrogate: 4-Terphenyl-d14</i>	<i>0.6402</i>		<i>1.00000</i>		<i>64.0</i>	<i>43 - 131</i>			
<i>Surrogate: Nitrobenzene-d5</i>	<i>0.5400</i>		<i>1.00000</i>		<i>54.0</i>	<i>20 - 119</i>			

LCS Dup (B6E0219-BSD1)

Prepared: 5/10/2016 Analyzed: 5/11/2016

1,4-Dioxane	1.25501	0.20	1.00000		126	49 - 169	1.18	20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>0.5821</i>		<i>1.00000</i>		<i>58.2</i>	<i>31 - 106</i>			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>0.6671</i>		<i>1.00000</i>		<i>66.7</i>	<i>28 - 122</i>			
<i>Surrogate: 4-Terphenyl-d14</i>	<i>0.6553</i>		<i>1.00000</i>		<i>65.5</i>	<i>43 - 131</i>			
<i>Surrogate: Nitrobenzene-d5</i>	<i>0.5254</i>		<i>1.00000</i>		<i>52.5</i>	<i>20 - 119</i>			



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Monthly Sam

Report To : Steve Netto

Reported : 05/13/2016

Notes and Definitions

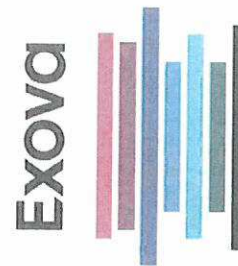
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When 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.

Exova
9240 Santa Fe Springs Road
Santa Fe Springs
California
USA
90670

T: +1 (562) 948-2225
F: +1 (562) 948-5850
E: info400@exova.com
W: www.exova.com



Testing, calibrating, advising

Certificate of Analysis

May 12, 2016


Advanced Technology Laboratories
PO Box 92797
Long Beach, CA 90809-2797

Attn: Rachelle Arada

Exova Job No: 204149
Purchase Order: COD - CC
Project Name: 1601608 / Groundwater
Samples Received: 1
Date Received: 05-06-16

Analysis	Page
Bromate by EPA 317.0	2


Michael Shelton
Technical Director


Patricia Metzger
Senior Chemist

Bromate by EPA 317.0
 Ion Chromatography with Post-Column Derivatization-Visible Absorption

Column: Dionex AS9-HC 250 mm x 4 mm, AG9-HC Guard 50 mm x 4 mm
 Eluent: 10 mM Na₂CO₃
 Flow: 1.2 mL/min
 Injection: 250 µL
 Detection: Post-column derivatization, Visible detection, 450 nm

Sample preparation: The undiluted sample was treated with a Dionex OnGuard II H cartridge to remove excess basic cations.

Parts Per Billion (µg/L)

Sample ID	Result
ATL Lab#: 1601608-04 / POX	ND
Method Blank	ND
Detection Limit	0.5
Date Analyzed:	05-09-16

Quality Control Summary

Sample ID:	Batch QC						
Analyte	Sample Result	Spike Conc	Spike Result	Spike % Rec	Spike Duplicate Result	Spike Duplicate % Rec	RPD
Bromate	ND	1000	1020	102	1020	102	0
QC Guidelines				75-125		75-125	NMT 10


ADVANCED TECHNOLOGY
 LABORATORIES

SUBCONTRACT ORDER

Work Order: 1601608

SENDING LABORATORY:

Advanced Technology Laboratories
 3275 Walnut Avenue
 Signal Hill, CA 90755
 Phone: 562.989.4045
 Fax: 562.989.6348
 Project Manager: Rachele Arada (Rachele@atlglobal.com)

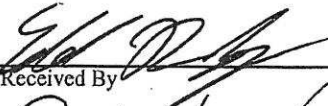
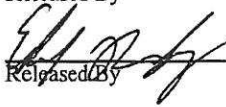
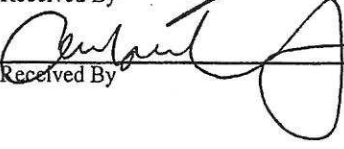
RECEIVING LABORATORY:

Exova Inc.
 9240 Santa Fe Springs Road
 Santa Fe Springs, CA 90670
 Phone : (562) 948-2225
 Fax: (562) 948-5850
 PO#: SC10393- STANDARD TAT (RS)

IMPORTANT : Please include Work Order # and PO # in your invoice.

Analysis	Due	Expires	Matrix	Date Sampled
ATL Lab#: 1601608-04 / POX 317.0 SUB [Bromate] 1-Poly Unpres - 125mL Comments:	05/19/16 17:00	05/06/16 08:23	Groundwater	05/05/16 08:23

① 05-06-16 CE
 ALSO HAS F

ASWER MANJGATH	5/6/16		5-6-16 9:47
Released By	Date	Received By	Date
	5-6-16 10:45		05-06-16 9:47
Released By	Date	Received By	Date

204149

PROJECT: Raytheon Main GETS Mid Monthly Sample

TASK NO.: 532.15

Project Manager Steve Netto
QA Manager Kevin Fong
Phone 858.455.6500
Fax 858.455.6533

Sampled By:		SAMPLE COLLECTION	
<u>Kevin Fong Erin Hunter</u>		Date	Time
LAB ID	SAMPLE ID		
<u>1601608-1</u>	<u>TB-050516</u>	<u>5/5/2016</u>	<u>7:00</u>
<u>-2</u>	<u>CEFF</u>		<u>7:57</u>
<u>-3</u>	<u>CBT</u>		<u>8:03</u>
<u>-4</u>	<u>POX</u>		<u>8:23</u>
<u>-5</u>	<u>INF</u>		<u>8:41</u>
<u>-6</u>	<u>EW-02</u>		<u>8:57</u>
<u>-7</u>	<u>MW-29</u>		<u>9:06</u>
<u>-8</u>	<u>PF</u>		<u>8:35</u>

MATRIX	PRESERVATION	CONTAINERS								ANALYSIS REQUESTED					Expected Concentration Range (ppb) for VOA's				SPECIAL HANDLING						
Groundwater	Lab prepared water	40-ml VOA	125 mL Poly	250 mL Poly	250 mL Glass	1 L Poly	1 L Amber	VOCs by EPA 8260B	Bromate by EPA 317	Bromide by EPA 300	Alkalinity by SM2320B	Total Organic Carbon by SM5310B	Total Suspended Solids by SM2540D	UV Absorption EPA 415.3 @254 nm	1,4-Dioxane by EPA 8270C MOD	1,4-Dioxane by EPA 8270C SIM	0 - 10	10 - 100	100 - 1,000	>1,000	24 hr TAT	48 hr TAT	5 Day TAT	Level IV Data Validation Requested	MS/MSD Requested
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Laboratory
Advanced Technology Laboratories
Attn: Rachelle Arada
3275 Walnut Ave
Signal Hill, CA 90755
(562) 989-4045

REMARKS

Total number of containers per analysis:		<u>204 2 1 1 6</u>	
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<u>Kevin Fong HHA</u>	<u>5/5/16 10:22</u>	<u>EM Rof ATL</u>	<u>5-5-16 0:22</u>
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<u>EM Rof ATL</u>	<u>5-5-16 12:09</u>	<u>FPD/ina / ATL</u>	<u>5/5/16 12:08</u>

- No. of containers correct
- Received in good condition
- Custody seals secure
- Conforms to COC document

Send Results to:
Steve Netto
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122
Ph: 858.455.5400
snetto@hargis.com

Instructions
Fill out form completely and sign only after verified for completeness
Complete in ballpoint pen. Draw one line through error, initial and date correction
Indicate the number of sample containers in analytical request space; indicate choice with ✓ or ×
Note applicable preservatives, special instructions, and deviations from typical environmental samples.
Consult project QA documents for specific instructions.

1.0 °C Temperature on receipt

May 26, 2016

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

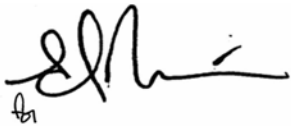
ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1601789
Client Reference : Raytheon Main GETS Monthly Sample, 532.15

Enclosed are the results for sample(s) received on May 19, 2016 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,



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 GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-051916	1601789-01	Lab prepared water	5/19/16 7:00	5/19/16 10:25
CEFF	1601789-02	Groundwater	5/19/16 8:50	5/19/16 10:25
CBT	1601789-03	Groundwater	5/19/16 9:00	5/19/16 10:25
POX	1601789-04	Groundwater	5/19/16 9:10	5/19/16 10:25
INF	1601789-05	Groundwater	5/19/16 9:20	5/19/16 10:25
EW-02	1601789-06	Groundwater	5/19/16 9:56	5/19/16 10:25
MW-29	1601789-07	Groundwater	5/19/16 10:12	5/19/16 10:25



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID TB-051916

Lab ID: 1601789-01

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,1,1-Trichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,1,2-Trichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,1-Dichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,1-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,1-Dichloropropene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,2,3-Trichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,2-Dibromoethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,2-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,2-Dichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,2-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,3-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,3-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
1,4-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
2,2-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
2-Chlorotoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
4-Chlorotoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
4-Isopropyltoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Benzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Bromobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Bromodichloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Bromoform	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Bromomethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Carbon tetrachloride	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Chlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Chloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Chloroform	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Chloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Dibromochloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID TB-051916

Lab ID: 1601789-01

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Dichlorodifluoromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Ethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Hexachlorobutadiene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Isopropylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
m,p-Xylene	ND	1.0	1	B6E0505	05/24/2016	05/24/16 12:40	
Methylene chloride	ND	1.0	1	B6E0505	05/24/2016	05/24/16 12:40	
n-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
n-Propylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Naphthalene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
o-Xylene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
sec-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Styrene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
tert-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Tetrachloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Toluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Trichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Trichlorofluoromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
Vinyl chloride	ND	0.50	1	B6E0505	05/24/2016	05/24/16 12:40	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>103 %</i>	<i>51 - 157</i>		B6E0505	05/24/2016	<i>05/24/16 12:40</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91.1 %</i>	<i>61 - 123</i>		B6E0505	05/24/2016	<i>05/24/16 12:40</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>112 %</i>	<i>57 - 147</i>		B6E0505	05/24/2016	<i>05/24/16 12:40</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0505	05/24/2016	<i>05/24/16 12:40</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID CEFF

Lab ID: 1601789-02

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,1,1-Trichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,1,2-Trichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,1-Dichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,1-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,1-Dichloropropene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,2,3-Trichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,2-Dibromoethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,2-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,2-Dichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,2-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,3-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,3-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
1,4-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
2,2-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
2-Chlorotoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
4-Chlorotoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
4-Isopropyltoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Benzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Bromobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Bromodichloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Bromoform	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Bromomethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Carbon tetrachloride	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Chlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Chloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Chloroform	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Chloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Dibromochloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID CEFF

Lab ID: 1601789-02

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Dichlorodifluoromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Ethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Hexachlorobutadiene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Isopropylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
m,p-Xylene	ND	1.0	1	B6E0505	05/24/2016	05/24/16 13:29	
Methylene chloride	ND	1.0	1	B6E0505	05/24/2016	05/24/16 13:29	
n-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
n-Propylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Naphthalene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
o-Xylene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
sec-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Styrene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
tert-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Tetrachloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Toluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Trichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Trichlorofluoromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
Vinyl chloride	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:29	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>104 %</i>	<i>51 - 157</i>		B6E0505	05/24/2016	<i>05/24/16 13:29</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91.4 %</i>	<i>61 - 123</i>		B6E0505	05/24/2016	<i>05/24/16 13:29</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>113 %</i>	<i>57 - 147</i>		B6E0505	05/24/2016	<i>05/24/16 13:29</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0505	05/24/2016	<i>05/24/16 13:29</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID CEFF

Lab ID: 1601789-02

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0455	05/20/2016	05/20/16 22:28	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>74.5 %</i>	<i>31 - 106</i>		B6E0455	05/20/2016	<i>05/20/16 22:28</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>83.6 %</i>	<i>28 - 122</i>		B6E0455	05/20/2016	<i>05/20/16 22:28</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>79.2 %</i>	<i>43 - 131</i>		B6E0455	05/20/2016	<i>05/20/16 22:28</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>75.2 %</i>	<i>20 - 119</i>		B6E0455	05/20/2016	<i>05/20/16 22:28</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID CBT

Lab ID: 1601789-03

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,1,1-Trichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,1,2-Trichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,1-Dichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,1-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,1-Dichloropropene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,2,3-Trichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,2-Dibromoethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,2-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,2-Dichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,2-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,3-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,3-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
1,4-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
2,2-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
2-Chlorotoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
4-Chlorotoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
4-Isopropyltoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Benzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Bromobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Bromodichloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Bromoform	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Bromomethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Carbon tetrachloride	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Chlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Chloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Chloroform	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Chloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Dibromochloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID CBT

Lab ID: 1601789-03

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Dichlorodifluoromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Ethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Hexachlorobutadiene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Isopropylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
m,p-Xylene	ND	1.0	1	B6E0505	05/24/2016	05/24/16 13:53	
Methylene chloride	ND	1.0	1	B6E0505	05/24/2016	05/24/16 13:53	
n-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
n-Propylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Naphthalene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
o-Xylene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
sec-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Styrene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
tert-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Tetrachloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Toluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Trichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Trichlorofluoromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
Vinyl chloride	ND	0.50	1	B6E0505	05/24/2016	05/24/16 13:53	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>103 %</i>	<i>51 - 157</i>		B6E0505	05/24/2016	<i>05/24/16 13:53</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.8 %</i>	<i>61 - 123</i>		B6E0505	05/24/2016	<i>05/24/16 13:53</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>114 %</i>	<i>57 - 147</i>		B6E0505	05/24/2016	<i>05/24/16 13:53</i>	
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>	<i>61 - 119</i>		B6E0505	05/24/2016	<i>05/24/16 13:53</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID CBT

Lab ID: 1601789-03

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0455	05/20/2016	05/20/16 22:54	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	76.8 %	31 - 106		B6E0455	05/20/2016	05/20/16 22:54	
<i>Surrogate: 2-Fluorobiphenyl</i>	84.5 %	28 - 122		B6E0455	05/20/2016	05/20/16 22:54	
<i>Surrogate: 4-Terphenyl-d14</i>	87.4 %	43 - 131		B6E0455	05/20/2016	05/20/16 22:54	
<i>Surrogate: Nitrobenzene-d5</i>	79.3 %	20 - 119		B6E0455	05/20/2016	05/20/16 22:54	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID POX

Lab ID: 1601789-04

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,1,1-Trichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,1,2-Trichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,1-Dichloroethane	0.80	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,1-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,1-Dichloropropene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,2,3-Trichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,2-Dibromoethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,2-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,2-Dichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,2-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,3-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,3-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
1,4-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
2,2-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
2-Chlorotoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
4-Chlorotoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
4-Isopropyltoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Benzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Bromobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Bromodichloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Bromoform	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Bromomethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Carbon tetrachloride	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Chlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Chloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Chloroform	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Chloromethane	0.62	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Dibromochloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID POX

Lab ID: 1601789-04

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Dichlorodifluoromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Ethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Hexachlorobutadiene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Isopropylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
m,p-Xylene	ND	1.0	1	B6E0505	05/24/2016	05/24/16 15:54	
Methylene chloride	ND	1.0	1	B6E0505	05/24/2016	05/24/16 15:54	
n-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
n-Propylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Naphthalene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
o-Xylene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
sec-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Styrene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
tert-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Tetrachloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Toluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Trichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Trichlorofluoromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
Vinyl chloride	ND	0.50	1	B6E0505	05/24/2016	05/24/16 15:54	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>	<i>51 - 157</i>		B6E0505	05/24/2016	<i>05/24/16 15:54</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.9 %</i>	<i>61 - 123</i>		B6E0505	05/24/2016	<i>05/24/16 15:54</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>114 %</i>	<i>57 - 147</i>		B6E0505	05/24/2016	<i>05/24/16 15:54</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0505	05/24/2016	<i>05/24/16 15:54</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID POX

Lab ID: 1601789-04

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

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	ND	0.20	1	B6E0455	05/20/2016	05/20/16 23:21	
Surrogate: 1,2-Dichlorobenzene-d4	74.8 %	31 - 106		B6E0455	05/20/2016	05/20/16 23:21	
Surrogate: 2-Fluorobiphenyl	84.5 %	28 - 122		B6E0455	05/20/2016	05/20/16 23:21	
Surrogate: 4-Terphenyl-d14	84.0 %	43 - 131		B6E0455	05/20/2016	05/20/16 23:21	
Surrogate: Nitrobenzene-d5	75.2 %	20 - 119		B6E0455	05/20/2016	05/20/16 23:21	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID INF

Lab ID: 1601789-05

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,1,1-Trichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,1,2-Trichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,1-Dichloroethane	1.0	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,1-Dichloroethene	110	5.0	10	B6E0505	05/24/2016	05/24/16 17:55	
1,1-Dichloropropene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,2,3-Trichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,2-Dibromoethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,2-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,2-Dichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,2-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,3-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,3-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
1,4-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
2,2-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
2-Chlorotoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
4-Chlorotoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
4-Isopropyltoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Benzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Bromobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Bromodichloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Bromoform	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Bromomethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Carbon tetrachloride	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Chlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Chloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Chloroform	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Chloromethane	0.58	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Dibromochloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID INF

Lab ID: 1601789-05

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Dichlorodifluoromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Ethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Hexachlorobutadiene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Isopropylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
m,p-Xylene	ND	1.0	1	B6E0505	05/24/2016	05/24/16 17:07	
Methylene chloride	ND	1.0	1	B6E0505	05/24/2016	05/24/16 17:07	
n-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
n-Propylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Naphthalene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
o-Xylene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
sec-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Styrene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
tert-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Tetrachloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Toluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Trichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Trichlorofluoromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
Vinyl chloride	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:07	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>	<i>51 - 157</i>		B6E0505	05/24/2016	<i>05/24/16 17:55</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>102 %</i>	<i>51 - 157</i>		B6E0505	05/24/2016	<i>05/24/16 17:07</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.3 %</i>	<i>61 - 123</i>		B6E0505	05/24/2016	<i>05/24/16 17:55</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91.7 %</i>	<i>61 - 123</i>		B6E0505	05/24/2016	<i>05/24/16 17:07</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>116 %</i>	<i>57 - 147</i>		B6E0505	05/24/2016	<i>05/24/16 17:55</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>113 %</i>	<i>57 - 147</i>		B6E0505	05/24/2016	<i>05/24/16 17:07</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0505	05/24/2016	<i>05/24/16 17:55</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0505	05/24/2016	<i>05/24/16 17:07</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID INF

Lab ID: 1601789-05

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	33	2.0	1	B6E0557	05/25/2016	05/26/16 11:34	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>60.2 %</i>	<i>42 - 106</i>		B6E0557	05/25/2016	<i>05/26/16 11:34</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>68.5 %</i>	<i>55 - 117</i>		B6E0557	05/25/2016	<i>05/26/16 11:34</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>75.4 %</i>	<i>52 - 142</i>		B6E0557	05/25/2016	<i>05/26/16 11:34</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>59.6 %</i>	<i>43 - 116</i>		B6E0557	05/25/2016	<i>05/26/16 11:34</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID EW-02

Lab ID: 1601789-06

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,1,1-Trichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,1,2-Trichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,1-Dichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,1-Dichloroethene	41	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,1-Dichloropropene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,2,3-Trichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,2-Dibromoethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,2-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,2-Dichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,2-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,3-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,3-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
1,4-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
2,2-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
2-Chlorotoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
4-Chlorotoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
4-Isopropyltoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Benzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Bromobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Bromodichloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Bromoform	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Bromomethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Carbon tetrachloride	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Chlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Chloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Chloroform	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Chloromethane	0.51	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Dibromochloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID EW-02

Lab ID: 1601789-06

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Dichlorodifluoromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Ethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Hexachlorobutadiene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Isopropylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
m,p-Xylene	ND	1.0	1	B6E0505	05/24/2016	05/24/16 16:42	
Methylene chloride	ND	1.0	1	B6E0505	05/24/2016	05/24/16 16:42	
n-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
n-Propylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Naphthalene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
o-Xylene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
sec-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Styrene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
tert-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Tetrachloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Toluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Trichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Trichlorofluoromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
Vinyl chloride	ND	0.50	1	B6E0505	05/24/2016	05/24/16 16:42	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>	<i>51 - 157</i>		B6E0505	05/24/2016	<i>05/24/16 16:42</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>90.4 %</i>	<i>61 - 123</i>		B6E0505	05/24/2016	<i>05/24/16 16:42</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>117 %</i>	<i>57 - 147</i>		B6E0505	05/24/2016	<i>05/24/16 16:42</i>	
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>	<i>61 - 119</i>		B6E0505	05/24/2016	<i>05/24/16 16:42</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID EW-02

Lab ID: 1601789-06

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	9.9	2.0	1	B6E0557	05/25/2016	05/26/16 12:01	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>51.7 %</i>	<i>42 - 106</i>		<i>B6E0557</i>	<i>05/25/2016</i>	<i>05/26/16 12:01</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>63.7 %</i>	<i>55 - 117</i>		<i>B6E0557</i>	<i>05/25/2016</i>	<i>05/26/16 12:01</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>79.8 %</i>	<i>52 - 142</i>		<i>B6E0557</i>	<i>05/25/2016</i>	<i>05/26/16 12:01</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>48.5 %</i>	<i>43 - 116</i>		<i>B6E0557</i>	<i>05/25/2016</i>	<i>05/26/16 12:01</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID MW-29

Lab ID: 1601789-07

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,1,1-Trichloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,1,2-Trichloroethane	1.3	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,1-Dichloroethane	3.8	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,1-Dichloroethene	430	5.0	10	B6E0505	05/24/2016	05/24/16 18:19	
1,1-Dichloropropene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,2,3-Trichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,2,3-Trichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,2,4-Trichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,2,4-Trimethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,2-Dibromoethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,2-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,2-Dichloroethane	0.74	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,2-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,3,5-Trimethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,3-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,3-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
1,4-Dichlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
2,2-Dichloropropane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
2-Chlorotoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
4-Chlorotoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
4-Isopropyltoluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Benzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Bromobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Bromodichloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Bromoform	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Bromomethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Carbon tetrachloride	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Chlorobenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Chloroethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Chloroform	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Chloromethane	0.61	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
cis-1,2-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
cis-1,3-Dichloropropene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Dibromochloromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main GETS Monthly Sample, 5

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/26/2016

Client Sample ID MW-29

Lab ID: 1601789-07

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Dichlorodifluoromethane	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Ethylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Hexachlorobutadiene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Isopropylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
m,p-Xylene	ND	1.0	1	B6E0505	05/24/2016	05/24/16 17:31	
Methylene chloride	ND	1.0	1	B6E0505	05/24/2016	05/24/16 17:31	
n-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
n-Propylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Naphthalene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
o-Xylene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
sec-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Styrene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
tert-Butylbenzene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Tetrachloroethene	0.97	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Toluene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
trans-1,2-Dichloroethene	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Trichloroethene	2.8	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Trichlorofluoromethane	1.1	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
Vinyl chloride	ND	0.50	1	B6E0505	05/24/2016	05/24/16 17:31	
<hr/>							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>103 %</i>	<i>51 - 157</i>		B6E0505	05/24/2016	<i>05/24/16 18:19</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>	<i>51 - 157</i>		B6E0505	05/24/2016	<i>05/24/16 17:31</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>89.5 %</i>	<i>61 - 123</i>		B6E0505	05/24/2016	<i>05/24/16 18:19</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.2 %</i>	<i>61 - 123</i>		B6E0505	05/24/2016	<i>05/24/16 17:31</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>113 %</i>	<i>57 - 147</i>		B6E0505	05/24/2016	<i>05/24/16 18:19</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>117 %</i>	<i>57 - 147</i>		B6E0505	05/24/2016	<i>05/24/16 17:31</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>61 - 119</i>		B6E0505	05/24/2016	<i>05/24/16 17:31</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6E0505	05/24/2016	<i>05/24/16 18:19</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Client Sample ID MW-29

Lab ID: 1601789-07

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

Analyst: LT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,4-Dioxane	68	2.0	1	B6E0557	05/25/2016	05/26/16 12:28	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>47.7 %</i>	<i>42 - 106</i>		B6E0557	05/25/2016	<i>05/26/16 12:28</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>51.7 %</i>	<i>55 - 117</i>		B6E0557	05/25/2016	<i>05/26/16 12:28</i>	S10
<i>Surrogate: 4-Terphenyl-d14</i>	<i>81.2 %</i>	<i>52 - 142</i>		B6E0557	05/25/2016	<i>05/26/16 12:28</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>48.9 %</i>	<i>43 - 116</i>		B6E0557	05/25/2016	<i>05/26/16 12:28</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

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
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Batch B6E0505 - MSVOA_LL_W

Blank (B6E0505-BLK1)

Prepared: 5/24/2016 Analyzed: 5/24/2016

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

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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
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Batch B6E0505 - MSVOA_LL_W (continued)

Blank (B6E0505-BLK1) - Continued

Prepared: 5/24/2016 Analyzed: 5/24/2016

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				
<hr/>									
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>24.46</i>		<i>25.0000</i>		<i>97.8</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>23.30</i>		<i>25.0000</i>		<i>93.2</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>25.44</i>		<i>25.0000</i>		<i>102</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.05</i>		<i>25.0000</i>		<i>100</i>	<i>61 - 119</i>			

LCS (B6E0505-BS1)

Prepared: 5/24/2016 Analyzed: 5/24/2016

1,1,1,2-Tetrachloroethane	25.9000	0.50	20.0000		130	76 - 132			
1,1,1-Trichloroethane	25.0100	0.50	20.0000		125	72 - 144			
1,1,2,2-Tetrachloroethane	21.4900	0.50	20.0000		107	70 - 120			
1,1,2-Trichloroethane	20.7400	0.50	20.0000		104	75 - 120			
1,1-Dichloroethane	22.2100	0.50	20.0000		111	65 - 127			
1,1-Dichloroethene	23.4000	0.50	20.0000		117	63 - 142			
1,1-Dichloropropene	24.2800	0.50	20.0000		121	78 - 137			
1,2,3-Trichloropropane	19.2600	0.50	20.0000		96.3	73 - 118			
1,2,3-Trichlorobenzene	22.1400	0.50	20.0000		111	53 - 164			
1,2,4-Trichlorobenzene	21.9500	0.50	20.0000		110	58 - 144			
1,2,4-Trimethylbenzene	23.6900	0.50	20.0000		118	75 - 140			
1,2-Dibromo-3-chloropropane	17.9900	0.50	20.0000		90.0	61 - 131			
1,2-Dibromoethane	21.4500	0.50	20.0000		107	74 - 125			
1,2-Dichlorobenzene	23.0500	0.50	20.0000		115	78 - 122			
1,2-Dichloroethane	19.6200	0.50	20.0000		98.1	70 - 126			
1,2-Dichloropropane	19.8400	0.50	20.0000		99.2	69 - 120			
1,3,5-Trimethylbenzene	24.2100	0.50	20.0000		121	73 - 145			



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

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
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Batch B6E0505 - MSVOA_LL_W (continued)

LCS (B6E0505-BS1) - Continued

Prepared: 5/24/2016 Analyzed: 5/24/2016

1,3-Dichlorobenzene	23.6000	0.50	20.0000		118	76 - 126			
1,3-Dichloropropane	19.0500	0.50	20.0000		95.2	76 - 117			
1,4-Dichlorobenzene	23.4500	0.50	20.0000		117	77 - 120			
2,2-Dichloropropane	27.2000	0.50	20.0000		136	47 - 169			
2-Chlorotoluene	23.0000	0.50	20.0000		115	75 - 135			
4-Chlorotoluene	22.9300	0.50	20.0000		115	70 - 133			
4-Isopropyltoluene	25.0300	0.50	20.0000		125	72 - 153			
Benzene	44.9000	0.50	40.0000		112	73 - 123			
Bromobenzene	22.2500	0.50	20.0000		111	75 - 121			
Bromodichloromethane	21.8200	0.50	20.0000		109	73 - 124			
Bromoform	21.3400	0.50	20.0000		107	70 - 135			
Bromomethane	20.8700	0.50	20.0000		104	10 - 166			
Carbon tetrachloride	26.1500	0.50	20.0000		131	65 - 171			
Chlorobenzene	22.8900	0.50	20.0000		114	80 - 121			
Chloroethane	20.2100	0.50	20.0000		101	55 - 143			
Chloroform	21.2000	0.50	20.0000		106	65 - 130			
Chloromethane	25.0500	0.50	20.0000		125	21 - 141			
cis-1,2-Dichloroethene	21.7700	0.50	20.0000		109	64 - 126			
cis-1,3-Dichloropropene	25.8100	0.50	20.0000		129	70 - 131			
Dibromochloromethane	23.0200	0.50	20.0000		115	74 - 125			
Dibromomethane	20.0800	0.50	20.0000		100	74 - 116			
Dichlorodifluoromethane	17.3600	0.50	20.0000		86.8	40 - 186			
Ethylbenzene	44.1700	0.50	40.0000		110	77 - 130			
Hexachlorobutadiene	22.9800	0.50	20.0000		115	52 - 176			
Isopropylbenzene	25.6900	0.50	20.0000		128	77 - 144			
m,p-Xylene	46.3400	1.0	40.0000		116	84 - 136			
Methylene chloride	17.9600	1.0	20.0000		89.8	72 - 150			
n-Butylbenzene	24.6200	0.50	20.0000		123	73 - 154			
n-Propylbenzene	24.4400	0.50	20.0000		122	77 - 145			
Naphthalene	20.5000	0.50	20.0000		102	55 - 137			
o-Xylene	44.3500	0.50	40.0000		111	79 - 135			
sec-Butylbenzene	24.9600	0.50	20.0000		125	73 - 157			
Styrene	23.2900	0.50	20.0000		116	78 - 125			
tert-Butylbenzene	24.5400	0.50	20.0000		123	78 - 149			
Tetrachloroethene	23.6900	0.50	20.0000		118	74 - 136			
Toluene	46.4700	0.50	40.0000		116	78 - 124			
trans-1,2-Dichloroethene	22.4200	0.50	20.0000		112	66 - 131			
Trichloroethene	21.3800	0.50	20.0000		107	78 - 128			
Trichlorofluoromethane	24.2800	0.50	20.0000		121	60 - 170			
Vinyl chloride	21.5900	0.50	20.0000		108	55 - 148			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.00</i>		<i>25.0000</i>		<i>92.0</i>	<i>51 - 157</i>			



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

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
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Batch B6E0505 - MSVOA_LL_W (continued)

LCS (B6E0505-BS1) - Continued

Prepared: 5/24/2016 Analyzed: 5/24/2016

Surrogate: 4-Bromofluorobenzene	24.73		25.0000	98.9	61 - 123
Surrogate: Dibromofluoromethane	25.73		25.0000	103	57 - 147
Surrogate: Toluene-d8	26.08		25.0000	104	61 - 119

LCS Dup (B6E0505-BSD1)

Prepared: 5/24/2016 Analyzed: 5/24/2016

1,1,1,2-Tetrachloroethane	25.6500	0.50	20.0000	128	76 - 132	0.970	20
1,1,1-Trichloroethane	24.2300	0.50	20.0000	121	72 - 144	3.17	20
1,1,2,2-Tetrachloroethane	21.2700	0.50	20.0000	106	70 - 120	1.03	20
1,1,2-Trichloroethane	20.2200	0.50	20.0000	101	75 - 120	2.54	20
1,1-Dichloroethane	21.3700	0.50	20.0000	107	65 - 127	3.85	20
1,1-Dichloroethene	22.8800	0.50	20.0000	114	63 - 142	2.25	20
1,1-Dichloropropene	24.8600	0.50	20.0000	124	78 - 137	2.36	20
1,2,3-Trichloropropane	18.9800	0.50	20.0000	94.9	73 - 118	1.46	20
1,2,3-Trichlorobenzene	21.7700	0.50	20.0000	109	53 - 164	1.69	20
1,2,4-Trichlorobenzene	21.8200	0.50	20.0000	109	58 - 144	0.594	20
1,2,4-Trimethylbenzene	23.5800	0.50	20.0000	118	75 - 140	0.465	20
1,2-Dibromo-3-chloropropane	17.3100	0.50	20.0000	86.6	61 - 131	3.85	20
1,2-Dibromoethane	20.8900	0.50	20.0000	104	74 - 125	2.65	20
1,2-Dichlorobenzene	22.8500	0.50	20.0000	114	78 - 122	0.871	20
1,2-Dichloroethane	19.1700	0.50	20.0000	95.8	70 - 126	2.32	20
1,2-Dichloropropane	19.8000	0.50	20.0000	99.0	69 - 120	0.202	20
1,3,5-Trimethylbenzene	24.0000	0.50	20.0000	120	73 - 145	0.871	20
1,3-Dichlorobenzene	23.2700	0.50	20.0000	116	76 - 126	1.41	20
1,3-Dichloropropane	19.1300	0.50	20.0000	95.6	76 - 117	0.419	20
1,4-Dichlorobenzene	23.2100	0.50	20.0000	116	77 - 120	1.03	20
2,2-Dichloropropane	26.3800	0.50	20.0000	132	47 - 169	3.06	20
2-Chlorotoluene	22.8000	0.50	20.0000	114	75 - 135	0.873	20
4-Chlorotoluene	22.8100	0.50	20.0000	114	70 - 133	0.525	20
4-Isopropyltoluene	24.8900	0.50	20.0000	124	72 - 153	0.561	20
Benzene	44.4600	0.50	40.0000	111	73 - 123	0.985	20
Bromobenzene	22.0000	0.50	20.0000	110	75 - 121	1.13	20
Bromodichloromethane	21.1800	0.50	20.0000	106	73 - 124	2.98	20
Bromoform	20.7100	0.50	20.0000	104	70 - 135	3.00	20
Bromomethane	21.8300	0.50	20.0000	109	10 - 166	4.50	20
Carbon tetrachloride	25.4600	0.50	20.0000	127	65 - 171	2.67	20
Chlorobenzene	22.7700	0.50	20.0000	114	80 - 121	0.526	20
Chloroethane	18.5900	0.50	20.0000	93.0	55 - 143	8.35	20
Chloroform	20.7500	0.50	20.0000	104	65 - 130	2.15	20
Chloromethane	22.4600	0.50	20.0000	112	21 - 141	10.9	20
cis-1,2-Dichloroethene	21.0800	0.50	20.0000	105	64 - 126	3.22	20
cis-1,3-Dichloropropene	25.2400	0.50	20.0000	126	70 - 131	2.23	20
Dibromochloromethane	22.4700	0.50	20.0000	112	74 - 125	2.42	20



Certificate of Analysis

Hargis & Associates, Inc.

Project Number : Raytheon Main GETS Monthly Sample, 5

9171 Towne Centre Drive, Suite 375

Report To : Steve Netto

San Diego , CA 92122

Reported : 05/26/2016

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
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Batch B6E0505 - MSVOA_LL_W (continued)

LCS Dup (B6E0505-BSD1) - Continued

Prepared: 5/24/2016 Analyzed: 5/24/2016

Dibromomethane	19.5900	0.50	20.0000		98.0	74 - 116	2.47	20	
Dichlorodifluoromethane	17.4700	0.50	20.0000		87.4	40 - 186	0.632	20	
Ethylbenzene	43.4400	0.50	40.0000		109	77 - 130	1.67	20	
Hexachlorobutadiene	23.1900	0.50	20.0000		116	52 - 176	0.910	20	
Isopropylbenzene	25.6400	0.50	20.0000		128	77 - 144	0.195	20	
m,p-Xylene	46.0600	1.0	40.0000		115	84 - 136	0.606	20	
Methylene chloride	17.5200	1.0	20.0000		87.6	72 - 150	2.48	20	
n-Butylbenzene	24.4500	0.50	20.0000		122	73 - 154	0.693	20	
n-Propylbenzene	24.2000	0.50	20.0000		121	77 - 145	0.987	20	
Naphthalene	20.0400	0.50	20.0000		100	55 - 137	2.27	20	
o-Xylene	44.0700	0.50	40.0000		110	79 - 135	0.633	20	
sec-Butylbenzene	24.8600	0.50	20.0000		124	73 - 157	0.401	20	
Styrene	23.2200	0.50	20.0000		116	78 - 125	0.301	20	
tert-Butylbenzene	24.5600	0.50	20.0000		123	78 - 149	0.0815	20	
Tetrachloroethene	24.0200	0.50	20.0000		120	74 - 136	1.38	20	
Toluene	45.4100	0.50	40.0000		114	78 - 124	2.31	20	
trans-1,2-Dichloroethene	21.9800	0.50	20.0000		110	66 - 131	1.98	20	
Trichloroethene	21.4500	0.50	20.0000		107	78 - 128	0.327	20	
Trichlorofluoromethane	23.4500	0.50	20.0000		117	60 - 170	3.48	20	
Vinyl chloride	21.1400	0.50	20.0000		106	55 - 148	2.11	20	
<hr/>									
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>21.52</i>		<i>25.0000</i>		<i>86.1</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.06</i>		<i>25.0000</i>		<i>96.2</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.64</i>		<i>25.0000</i>		<i>98.6</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.27</i>		<i>25.0000</i>		<i>101</i>	<i>61 - 119</i>			

Duplicate (B6E0505-DUP1)

Source: 1601789-01

Prepared: 5/24/2016 Analyzed: 5/24/2016

1,1,1,2-Tetrachloroethane	ND	0.50		ND	NR			20	
1,1,1-Trichloroethane	ND	0.50		ND	NR			20	
1,1,2,2-Tetrachloroethane	ND	0.50		ND	NR			20	
1,1,2-Trichloroethane	ND	0.50		ND	NR			20	
1,1-Dichloroethane	ND	0.50		ND	NR			20	
1,1-Dichloroethene	ND	0.50		ND	NR			20	
1,1-Dichloropropene	ND	0.50		ND	NR			20	
1,2,3-Trichloropropane	ND	0.50		ND	NR			20	
1,2,3-Trichlorobenzene	ND	0.50		ND	NR			20	
1,2,4-Trichlorobenzene	ND	0.50		ND	NR			20	
1,2,4-Trimethylbenzene	ND	0.50		ND	NR			20	
1,2-Dibromo-3-chloropropane	ND	0.50		ND	NR			20	
1,2-Dibromoethane	ND	0.50		ND	NR			20	
1,2-Dichlorobenzene	ND	0.50		ND	NR			20	
1,2-Dichloroethane	ND	0.50		ND	NR			20	



Certificate of Analysis

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Project Number : Raytheon Main GETS Monthly Sample, 5

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Reported : 05/26/2016

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
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Batch B6E0505 - MSVOA_LL_W (continued)

Duplicate (B6E0505-DUP1) - Continued

Source: 1601789-01

Prepared: 5/24/2016 Analyzed: 5/24/2016

1,2-Dichloropropane	ND	0.50		ND	NR			20	
1,3,5-Trimethylbenzene	ND	0.50		ND	NR			20	
1,3-Dichlorobenzene	ND	0.50		ND	NR			20	
1,3-Dichloropropane	ND	0.50		ND	NR			20	
1,4-Dichlorobenzene	ND	0.50		ND	NR			20	
2,2-Dichloropropane	ND	0.50		ND	NR			20	
2-Chlorotoluene	ND	0.50		ND	NR			20	
4-Chlorotoluene	ND	0.50		ND	NR			20	
4-Isopropyltoluene	ND	0.50		ND	NR			20	
Benzene	ND	0.50		ND	NR			20	
Bromobenzene	ND	0.50		ND	NR			20	
Bromodichloromethane	ND	0.50		ND	NR			20	
Bromoform	ND	0.50		ND	NR			20	
Bromomethane	ND	0.50		ND	NR			20	
Carbon tetrachloride	ND	0.50		ND	NR			20	
Chlorobenzene	ND	0.50		ND	NR			20	
Chloroethane	ND	0.50		ND	NR			20	
Chloroform	ND	0.50		ND	NR			20	
Chloromethane	ND	0.50		ND	NR			20	
cis-1,2-Dichloroethene	ND	0.50		ND	NR			20	
cis-1,3-Dichloropropene	ND	0.50		ND	NR			20	
Dibromochloromethane	ND	0.50		ND	NR			20	
Dibromomethane	ND	0.50		ND	NR			20	
Dichlorodifluoromethane	ND	0.50		ND	NR			20	
Ethylbenzene	ND	0.50		ND	NR			20	
Hexachlorobutadiene	ND	0.50		ND	NR			20	
Isopropylbenzene	ND	0.50		ND	NR			20	
m,p-Xylene	ND	1.0		ND	NR			20	
Methylene chloride	ND	1.0		ND	NR			20	
n-Butylbenzene	ND	0.50		ND	NR			20	
n-Propylbenzene	ND	0.50		ND	NR			20	
Naphthalene	ND	0.50		ND	NR			20	
o-Xylene	ND	0.50		ND	NR			20	
sec-Butylbenzene	ND	0.50		ND	NR			20	
Styrene	ND	0.50		ND	NR			20	
tert-Butylbenzene	ND	0.50		ND	NR			20	
Tetrachloroethene	ND	0.50		ND	NR			20	
Toluene	ND	0.50		ND	NR			20	
trans-1,2-Dichloroethene	ND	0.50		ND	NR			20	
Trichloroethene	ND	0.50		ND	NR			20	
Trichlorofluoromethane	ND	0.50		ND	NR			20	
Vinyl chloride	ND	0.50		ND	NR			20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

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
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Batch B6E0505 - MSVOA_LL_W (continued)

Duplicate (B6E0505-DUP1) - Continued

Source: 1601789-01

Prepared: 5/24/2016 Analyzed: 5/24/2016

Surrogate: 1,2-Dichloroethane-d4	26.01		25.0000		104	51 - 157			
Surrogate: 4-Bromofluorobenzene	23.00		25.0000		92.0	61 - 123			
Surrogate: Dibromofluoromethane	28.73		25.0000		115	57 - 147			
Surrogate: Toluene-d8	25.49		25.0000		102	61 - 119			



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

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
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Batch B6E0557 - MSSEMI_ISOTOPEDILN_W

Blank (B6E0557-BLK1)

Prepared: 5/25/2016 Analyzed: 5/25/2016

1,4-Dioxane	ND	2.0			NR				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	56.30		100.000		56.3	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	56.68		100.000		56.7	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	87.63		100.000		87.6	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	49.29		100.000		49.3	43 - 116			

LCS (B6E0557-BS1)

Prepared: 5/25/2016 Analyzed: 5/26/2016

1,4-Dioxane	107.800	2.0	100.000		108	62 - 127			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	41.80		100.000		41.8	42 - 106			S3
<i>Surrogate: 2-Fluorobiphenyl</i>	59.99		100.000		60.0	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	70.24		100.000		70.2	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	51.53		100.000		51.5	43 - 116			

LCS Dup (B6E0557-BSD1)

Prepared: 5/25/2016 Analyzed: 5/26/2016

1,4-Dioxane	102.870	2.0	100.000		103	62 - 127	4.68	20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	42.89		100.000		42.9	42 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	59.73		100.000		59.7	55 - 117			
<i>Surrogate: 4-Terphenyl-d14</i>	76.38		100.000		76.4	52 - 142			
<i>Surrogate: Nitrobenzene-d5</i>	52.09		100.000		52.1	43 - 116			



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San Diego, CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

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
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Batch B6E0455 - MSSEMI_W

Blank (B6E0455-BLK1)

Prepared: 5/20/2016 Analyzed: 5/20/2016

1,4-Dioxane	ND	0.20			NR				
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.5220		1.00000		52.2	31 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.7384		1.00000		73.8	28 - 122			
<i>Surrogate: 4-Terphenyl-d14</i>	0.8577		1.00000		85.8	43 - 131			
<i>Surrogate: Nitrobenzene-d5</i>	0.6306		1.00000		63.1	20 - 119			

LCS (B6E0455-BS1)

Prepared: 5/20/2016 Analyzed: 5/20/2016

1,4-Dioxane	1.22394	0.20	1.00000		122	49 - 169			
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.5217		1.00000		52.2	31 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.7398		1.00000		74.0	28 - 122			
<i>Surrogate: 4-Terphenyl-d14</i>	0.8592		1.00000		85.9	43 - 131			
<i>Surrogate: Nitrobenzene-d5</i>	0.6812		1.00000		68.1	20 - 119			

LCS Dup (B6E0455-BSD1)

Prepared: 5/20/2016 Analyzed: 5/20/2016

1,4-Dioxane	1.13910	0.20	1.00000		114	49 - 169	7.18	20	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	0.5023		1.00000		50.2	31 - 106			
<i>Surrogate: 2-Fluorobiphenyl</i>	0.7034		1.00000		70.3	28 - 122			
<i>Surrogate: 4-Terphenyl-d14</i>	0.8139		1.00000		81.4	43 - 131			
<i>Surrogate: Nitrobenzene-d5</i>	0.6440		1.00000		64.4	20 - 119			



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 05/26/2016

Notes and Definitions

S3	Surrogate recovery outside of laboratory acceptance limit. Unable to confirm matrix effects.
S10	Surrogate recovery was outside of laboratory acceptance limit due to possible 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.

PROJECT: Raytheon Main GETS Monthly Sample

TASK NO.: 532.15

Project Manager Steve Netto

QA Manager Kevin Fong

Phone 858.455.6500

Fax 858.455.6533

Sampled By:
Kevin Fong Greg Peterson

SAMPLE COLLECTION

LAB ID	SAMPLE ID	Date	Time	Groundwater	Lab prepared water	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sodium Hydroxide (NaOH)	Sulfuric Acid (H ₂ SO ₄)	Ice	40-ml VOA	125 mL Poly	250 mL Poly	250 mL Glass	1 L Poly	1 L Amber	VOCs by EPA 8260B	Bromate by EPA 317	Bromide by EPA 300	Alkalinity by SM2320B	Total Organic Carbon by SM5310B	Total Suspended Solids by SM2540D	UV Absorption EPA 415.3 @ 254 nm	1,4-Dioxane by EPA 8270C MOD	1,4-Dioxane by EPA 8270C SIM	0 - 10	10 - 100	100 - 1,000	>1,000	24 hr TAT	48 hr TAT	5 Day TAT	Level IV Data Validation Requested	MS/MSD Requested	
1601789-1	TR-051916	5/19/16	7:00		X						2						X																		
-2	CEFF		8:50	X	X	X	X	X	X	X	3						X																		
-3	CET		9:00	X	X	X	X	X	X	X	3						X																		
-4	POX		9:10	X	X	X	X	X	X	X	3						X																		
-5	INF		9:20	X	X	X	X	X	X	X	3						X																		
-6	EW-02		9:56	X	X	X	X	X	X	X	3						X																		
-7	MW-29		10:12	X	X	X	X	X	X	X	3						X																		

Laboratory
Advanced Technology Laboratories
Attn: Rachelle Arada
3275 Walnut Ave
Signal Hill, CA 90755
(562) 989-4045

REMARKS

← 24-HR TAT →

Total number of containers per analysis:

20

Total No. of Containers: 20

Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<u>Kevin Fong HTA</u>	<u>5/19/16 10:25</u>	<u>EMD by ATL</u>	<u>5-19-16 10:25</u>
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<u>EMD by ATL</u>	<u>5-19-16 12:15</u>	<u>FDD by ATL</u>	<u>5/19/16 12:15</u>

- No. of containers correct
- Received in good condition
- Custody seals secure
- Conforms to COC document

1.4 Temperature on receipt

Send Results to:
Steve Netto
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122
Ph: 858.455.5400
snetto@hargis.com

Instructions
Fill out form completely and sign only after verified for completeness
Complete in ballpoint pen. Draw one line through error, initial and date correction
Indicate the number of sample containers in analytical request space; indicate choice with ✓ or ×
Note applicable preservatives, special instructions, and deviations from typical environmental samples.
Consult project QA documents for specific instructions.