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HYDROGEOLOGY • ENGINEERING

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September 23, 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, Third 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 third 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 third 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 third quarter 2016 groundwater monitoring and pilot GETS operation from June through August 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 August 2016 in general accordance with the GMWPSAP and Addendum No.1 (H+A, 2003 and 2011a) (Table 1).

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 August 1, 2016 (Table 2).

Other Offices:

Folsom, CA
Mesa, AZ
Tucson, AZ

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Groundwater samples were collected during the period from August 1 through August 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. Groundwater samples were collected after both one three and casing volumes had been purged 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 August 2016 consisted of trip blanks, field duplicates, and laboratory split samples. Trip blanks were provided by ATL. Field duplicate samples were collected for analysis of VOCs and 1,4-dioxane from monitor wells MW-16, MW-31, MW-36, MW-39, and MW-40 in August 2016 (Table 3). Split samples were collected for analysis of VOCs and 1,4-dioxane from monitor wells MW-31, MW-36, MW-39, and MW-40 in August 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 are within quality control criteria.

There were no detections of 1,4-dioxane in the trip and/or laboratory method blanks analyzed with groundwater samples collected during the August 2016 groundwater monitoring event (Table 3; Appendix B). There were two detections of methylene chloride in trip blanks TB-072116 and TB-080316A at 3.6 micrograms per liter (ug/L) and 2.1 ug/L, respectively. No groundwater samples contained methylene chloride above the limit of detection; therefore no associated data were qualified, and the methylene chloride detected in the trip blanks is suspected laboratory contaminant.

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 third 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. Current extraction rates are nominally 40 gallons per minute (gpm) from extraction well EW-02 and 10 gpm from extraction well 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 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 (a relatively high-concentration extraction well) 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 in March 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 third quarter 2016, the pilot GETS was operational approximately 89 percent of the available runtime and approximately 5.8 million gallons of groundwater were treated and discharged to the sanitary sewer (Table 4). Downtime during the third quarter of 2016 was associated with EW-02 maintenance, and alarm testing. The average operational monthly discharge flowrate to the sanitary sewer from June 2016 through August 2016 was approximately 40 gpm. Since startup of the pilot GETS, approximately 127 million gallons of groundwater was treated at an average operational flowrate of 42 gpm through the end of August 2016 (Table 4).

Current monthly, and quarterly pilot GETS monitoring activities include collecting groundwater 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 for analysis. Analytical results of the extraction wells and treatment system sampling 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 provide a polish following the UV Ox treatment and remove possible low-level VOCs remaining in groundwater 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 third quarter 2016. The samples collected from the effluent of the UV Ox treatment unit (Post UV Ox) were analyzed for VOCs and 1,4-dioxane, and resulted in non-detect values with exceptions of low-level (sub-ug/l) detections of the VOC 1,1-dichloroethane (1,1-DCA), and a single detection of 1,4-dioxane at the laboratory reporting limit of 0.2 ug/l in a UV Ox sample collected in June 2016 (Table 6). There was a single low-level detection of 1,1-DCA in a Carbon Breakthrough (mid-point) sample collected in August 2016, at a concentration of 0.51 ug/L, which is near the laboratory reporting limit of 0.5 ug/l. There were no detections of VOCs or 1,4-dioxane in the Carbon Effluent samples collected during the period June through August 2016.

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 maximum contaminant level (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 third quarter 2016.

The pilot GETS continues to remove VOCs and 1,4-dioxane from extracted groundwater. During the third quarter of 2016, the pilot GETS removed approximately 3.6 pounds of VOCs and 1.1 pounds of 1,4-dioxane from

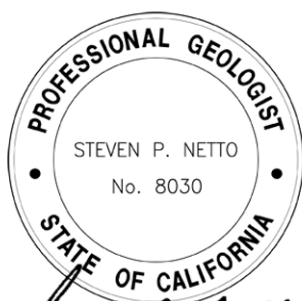
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extracted groundwater. Since startup of the pilot GETS in July 2008, approximately 149 pounds of VOCs and 32 pounds of 1,4-dioxane have been removed from groundwater through August 2016 (Figure 7). Operation of the pilot GETS continues to be optimized 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,

HARGIS + ASSOCIATES, INC.

A handwritten signature of Steven P. Netto in black ink.

Steven P. Netto, PG 8030, CHG 872
Senior Hydrogeologist

A handwritten signature of Tyler J. Evans in black ink.

Tyler J. Evans
Hydrogeologist

A handwritten signature of Kevin D. Fong in black ink.

Kevin D. Fong, PE
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SPN/TJE/KDF/jak



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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.
- _____, 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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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)

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Ms. Kim Buss, Orange County Public Works – Flood Control District

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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
THIRD 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	08/01/16	181.29	177.64	3.65	
MW-08	08/01/16	155.91	148.75	7.16	
MW-09	08/01/16	180.10	176.08	4.02	
MW-13	08/01/16	141.84	144.12	-2.28	
MW-15	08/01/16	144.95	150.34	-5.39	
MW-16	08/01/16	142.40	151.25	-8.85	
MW-17	08/01/16	142.70	147.70	-5.00	
MW-18	08/01/16	142.32	148.48	-6.16	
MW-19	08/01/16	142.06	147.99	-5.93	
MW-20	08/01/16	184.19	171.60	12.59	
MW-21	08/01/16	141.18	141.20	-0.02	
MW-22	08/01/16	138.65	144.28	-5.63	
MW-23	08/01/16	137.33	144.41	-7.08	
MW-24	08/01/16	142.83	139.10	3.73	
MW-25	08/01/16	142.64	140.58	2.06	
MW-26A	08/01/16	137.04	139.86	-2.82	
MW-26B	08/01/16	137.05	142.03	-4.98	
MW-26C	08/01/16	137.22	148.45	-11.23	
MW-27	08/01/16	137.16	147.71	-10.55	
MW-28	08/01/16	140.77	152.25	-11.48	
MW-29	06/01/16	139.81	187.60	-47.79	Pilot GETS
MW-29	06/16/16	139.81	190.92	-51.11	Pilot GETS
MW-29	07/07/16	139.81	192.24	-52.43	Pilot GETS
MW-29	07/21/16	139.81	191.95	-52.14	Pilot GETS
MW-29	08/01/16	139.81	193.48	-53.67	Pilot GETS
MW-29	08/18/16	139.81	194.13	-54.32	Pilot GETS
MW-30A	08/01/16	129.44	142.20	-12.76	
MW-30B	08/01/16	129.39	138.20	-8.81	

TABLE 2
GROUNDWATER LEVELS
THIRD 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 (continued)</u>					
MW-31	08/01/16	119.60	130.85	-11.25	
MW-32A	08/01/16	92.88	107.97	-15.09	
MW-32B	08/01/16	92.89	107.20	-14.31	
MW-32C	08/01/16	92.88	92.50	0.38	
MW-33	08/01/16	83.19	102.90	-19.71	
MW-34A	08/01/16	153.25	165.49	-12.24	
MW-34B	08/01/16	153.11	168.68	-15.57	
MW-34C	08/01/16	153.29	166.20	-12.91	
MW-35A	08/01/16	93.57	95.55	-1.98	
MW-35B	08/01/16	93.56	104.05	-10.49	
MW-35C	08/01/16	93.55	107.20	-13.65	
MW-36	08/01/16	86.65	108.38	-21.73	
MW-37	08/01/16	155.60	157.24	-1.64	
MW-38	08/01/16	154.90	169.55	-14.65	
MW-39	08/01/16	84.25	106.20	-21.95	
MW-40	08/01/16	123.40	131.15	-7.75	
MW-41	08/01/16	155.60	172.88	-17.28	
EW-01	08/01/16	141.07	150.17	-9.10	
EW-02	06/01/16	132.97	146.32	-13.35	Pilot GETS
EW-02	06/16/16	132.97	148.05	-15.08	Pilot GETS
EW-02	07/07/16	132.97	149.30	-16.33	Pilot GETS
EW-02	07/21/16	132.97	150.62	-17.65	Pilot GETS
EW-02	08/01/16	132.97	150.95	-17.98	Pilot GETS
EW-02	08/18/16	132.97	152.13	-19.16	Pilot GETS
<u>Perched Zone Water Levels</u>					
P-07	08/01/16	142.31	114.27	28.04	
P-09	08/01/16	183.86	120.90	62.96	

TABLE 2
GROUNDWATER LEVELS
THIRD QUARTER 2016

Well Identifier	Date Measured	Reference Point	Depth to Water (feet bls)	Water Level	Remediation System On
		Elevation (a) (feet msl)		Elevation (feet msl)	

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

TABLE 3

**PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
THIRD 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 (3*/1**)	
Regional Groundwater System Monitor and Extraction Wells																	
MW-08	08/01/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	8.0	2.8	< 0.50	< 0.50	< 0.50	38	< 0.50	< 0.50	< 0.20	
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-09	08/03/16	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-09 Historical Range***			< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - 0.79	< 0.50 - < 5.0	< 0.50 - 4.9	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - 0.96	< 0.50 - 5.3	< 0.50 - < 5.0	< 0.20 - 52 E	
MW-15	08/01/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	3.8	< 0.50	< 0.50	< 0.50	< 0.50	1.4	6.6	< 0.50	NA	
MW-15 Historical Range***			< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - 12	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - 7.8	< 0.50 - 20	< 0.50 - < 5.0	< 0.50 - < 2.0	
MW-16	08/02/16	ORG	<2.5	<2.5	<2.5	6.2	<2.5	1,000	<2.5	<2.5	<2.5	<2.5	6.2	<2.5	<2.5	27	
MW-16	08/02/16	DUP	<2.5	<2.5	<2.5	5.3	<2.5	1,000	<2.5	<2.5	<2.5	<2.5	6.4	<2.5	<2.5	29	
MW-16 Historical Range***			< 0.50 - < 5.0	< 0.50 - 0.58	< 0.50 - 1.1	< 0.50 - 18	< 0.50 - 4.5	49 - 1,900	< 0.50 - 0.57	< 0.50 - 2.9	< 0.50 - 28 E	< 0.50 - 10	< 0.50 - 7.1	< 0.50 - < 5.0	< 0.50 - < 5.0	< 2.0 - 440	
MW-18	08/02/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	3.8	< 0.50	< 0.20	
MW-18 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 0.51	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 6.3	< 0.50 - 0.82	< 0.20 - 7.7 E	
MW-20	08/02/16	ORG	< 0.50	< 0.50	0.85 High	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20	
MW-20 Historical Range***			< 0.50	< 0.50	< 0.50 - 0.78	< 0.50	< 0.50	< 0.50 - 82	< 0.50	< 0.50	< 0.50 - 0.63	< 0.50	< 0.50	< 0.50 - 0.58	< 0.50	< 0.20 - 3.9	
MW-21	08/01/16	ORG	< 2.5	< 2.5	< 2.5	27	4.2	1,500	< 2.5	4.5	< 2.5	11	20	< 2.5	< 2.5	250	
MW-21 Historical Range***			< 0.50 - < 25	< 0.50 - 1.9	< 0.50 - 4.6	< 0.50 - 71	< 0.50 - 8.9	200 - 4,900	< 0.50 - 2.4	< 0.50 - 12	< 0.50 - 2.0	< 0.50 - 27	0.96 - 46	< 0.50 - 0.53	< 0.50 - < 10	11 - 1,100	
MW-26C	08/02/16	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	08/03/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.88	< 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	06/01/16	ORG	< 0.50	< 0.50	< 0.50	3.5	0.62	250	< 0.50	0.96	< 0.50	0.98	3.5	1.7	< 0.50	130	
MW-29	06/16/16	ORG	< 0.50	< 0.50	< 0.50	3.2	< 0.50	240	< 0.50	1.1	< 0.50	1.2	2.5	< 0.50	< 0.50	82	
MW-29	07/07/16	ORG	< 0.50	< 0.50	< 0.50	3.3	< 0.50	310	< 0.50	< 0.50	< 0.50	1.1	3.1	1.5	< 0.50	95	
MW-29	07/21/16	ORG	< 0.50	< 0.50	0.54	4.1	< 0.50	410	< 0.50	< 0.50	< 0.50	1.1	2.8	1.5	< 0.50	81	
MW-29	08/04/16	ORG	< 0.50	< 0.50	< 0.50	3.3	0.57	250	< 0.50	0.88	< 0.50	1.0	3.1	1.2	< 0.50	77	
MW-29	08/18/16	ORG	< 0.50	< 0.50	< 0.50	2.6	0.51	250	< 0.50	0.63	< 0.50	0.90	2.5	0.66	< 0.50	86	
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	08/03/16	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-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	08/03/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	15	4.3	< 0.50	< 0.50	< 0.50	80	< 0.50	< 0.50	0.34	
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	08/03/16	ORG	< 0.50	< 0.50	< 0.50	1.8	< 0.50	170	< 0.50	< 0.50	< 0.50	< 0.50	7.2	< 0.50	0.75	4.7	
MW-31	08/03/16	DUP	< 0.50	< 0.50	< 0.50	1.8	< 0.50	160	< 0.50	< 0.50	< 0.50	< 0.50	7.2	< 0.50	0.57	3.7	
MW-31	08/03/16	SPT	<1.0	< 0.50	< 1.0	1.5	< 0.50	110	<1.0	<1.0	<1.0	<1.0	5.7	<1.0	<1.0	7.6	
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-32A	08/02/16	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-32A Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 - 0.57	
MW-32B_1SV	08/02/16	ORG	< 0.50	< 0.50	< 0.50	1.4	< 0.50	150	5.6	< 0.50	< 0.50	< 0.50	55	< 0.50	< 0.50	2.9	
MW-32B	08/02/16	ORG	< 0.50	< 0.50	< 0.50	1.4	< 0.50	180	5.9	< 0.50	< 0.50	< 0.50	44	< 0.50	< 0.50	2.6	
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-32C	08/02/16	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-32C Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 0.56	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20 - 1.0	

TABLE 3
PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
THIRD QUARTER 2016

Concentration (micrograms per liter)																	
VOLATILE ORGANIC COMPOUNDS (FEDERAL MCL/CALIFORNIA MCL)																	Semi-VOCs
Well Identifier / Sample Identifier	Date Sampled	QA Code	Benzene (5/1)	Carbon Tetrachloride (5/0.5)	Chloroform (80/80)	1,1-DCA (~5)	1,2-DCA (5/0.5)	1,1-DCE (7/6)	cis-1,2-DCE (70/6)	PCE (5/5)	1,1,1-TCA (200/200)	1,1,2-TCA (5/5)	TCE (5/5)	TCFM (~150)	Toluene (1,000/150)	1,4-Dioxane (371**)	
Regional Groundwater System Monitor and Extraction Wells (cont'd)																	
MW-33_1SV	08/02/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	8.8	< 0.50	< 0.50	< 0.50	< 0.50	1.10	< 0.50	< 0.50	< 0.20	
MW-33	08/02/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	6.8	< 0.50	< 0.50	< 0.50	< 0.50	0.78	< 0.50	< 0.50	< 0.20	
MW-33 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.7 - 12	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 1.6	< 0.50	< 0.50 - 1.4	< 0.20 - < 2.0	
MW-34A	08/03/16	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-34A 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 - 1.6	< 0.50 - 2.8	< 0.20 - < 2.0	
MW-34B	08/03/16	ORG	< 0.50	< 0.50	< 0.50	0.96	< 0.50	73	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	12	
MW-34B Historical Range***			< 0.50 - < 5.0	< 0.50 - < 5.0	< 0.50 - 0.50	< 0.50 - 9.8	< 0.50 - 1.4	20 E - 1,100	< 0.50 - < 5.0	< 0.50 - 1.1	< 0.50 - 1.0	< 0.50 - 2.6	< 0.50 - 2.1	< 0.50 - < 5.0	< 0.50 - 2.6	4.1 - 196	
MW-34C	08/03/16	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-34C 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 - 9.6	< 0.20 - < 2.0	
MW-35C	08/02/16	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	
MW-36_1SV	08/03/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	27	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20	
MW-36	08/03/16	ORG	< 0.50	< 0.50	< 0.50	0.76	< 0.50	66	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.6	
MW-36	08/03/16	DUP	< 0.50	< 0.50	< 0.50	0.83	< 0.50	65	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	2.4	
MW-36	08/03/16	SPT	< 0.50	< 0.50	< 1.0	< 1.0	< 0.50	93	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	5.8	
MW-36 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50 - 1.7	< 0.50	2.9 - 140	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 5.9	< 0.20 - 15	
MW-37	08/03/16	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-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	08/03/16	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-38 Historical Range***			< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20	
MW-39	08/03/16	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-39	08/03/16	DUP	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20	
MW-39	08/03/16	SPT	< 0.50	< 0.50	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
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	08/04/16	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	< 0.20	
MW-40	08/04/16	DUP	< 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	08/04/16	SPT	< 0.50	< 0.50	< 1.0	< 1.0	< 0.50	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	
MW-40 Historical Range***			< 0.50	< 0.50	< 0.50 - 0.60	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.20	
MW-41	08/03/16	ORG	< 0.50	< 0.50	0.60	< 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 - 0.72	< 0.50 - 1.1	< 0.50	< 0.50 - 110	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50 - 110	< 0.50	< 0.50	< 0.20 - 10	
EW-01	08/01/16	ORG	< 0.50	< 0.50	< 0.50	5.6	< 0.50	430	< 0.50	< 0.50	< 0.50	1.7	0.76	0.60	< 0.50	90	
EW-01 Historical Range***			< 0.50 - 2.0	< 0.50 - 0.55	< 0.50 - 1.2	< 0.50 - 16	< 0.50 - 4.0	< 0.50 - 1,600 E	< 0.50 - 0.52	< 0.50 - 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	06/01/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	31	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	12	
EW-02	06/16/16	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	7.6	
EW-02	07/07/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	30	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	7.3	
EW-02	07/21/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	38	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	8.4	
EW-02	08/04/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	25	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	6.5	
EW-02	08/18/16	ORG	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	26	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	9.6	
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-060116	06/01/16	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	NA	
TB-070716	06/16/16	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	NA	
TB-070716	07/07/16	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	NA	
TB-072116 ⁽¹⁾	07/21/16	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	NA	
TB-080116	08/01/16	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	NA	

TABLE 3
PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
THIRD QUARTER 2016

.....Concentration (micrograms per liter).....																
VOLATILE ORGANIC COMPOUNDS (FEDERAL MCL/CALIFORNIA MCL)															Semi-VOCs	
Well Identifier / Sample Identifier	Date Sampled	QA Code	Benzene (5/1)	Carbon Tetrachloride (5/0.5)	Chloroform (80/80)	1,1-DCA (-/5)	1,2-DCA (5/0.5)	1,1-DCE (7/6)	cis-1,2-DCE (70/6)	PCE (5/5)	1,1,1-TCA (200/200)	1,1,2-TCA (5/5)	TCE (5/5)	TCFM (-/150)	Toulene (1,000/150)	1,4-Dioxane (3*/1**)
RB-080216	08/02/16	RB	< 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
TB-080216B	08/02/16	TB	< 0.50	< 0.50	<1.0	<1.0	< 0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 10	<1.0	NA
TB-080316A ⁽¹⁾	08/03/16	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	NA
TB-080416	08/04/16	TB-SPT	< 0.50	< 0.50	<1.0	<1.0	< 0.50	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 10	<1.0	NA

TABLE 3

PREVALENT VOLATILE ORGANIC COMPOUNDS AND 1,4-DIOXANE IN GROUNDWATER
THIRD 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)

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

(1) Methylene Chloride was detected in trip blank TB-072116 AND TB-080316A at 3.6 ug/L and 2.1 ug/L, respectively. No other samples had detections of methylene chloride.

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
ug/l = micrograms per liter

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%
Jun-16	1,802,389	34.8	43.2	696	862	81%
Jul-16	1,700,529	42.2	45.7	620	672	92%
Aug-16	2,256,396	44.8	46.5	808	840	96%
3Q2016	5,759,314	40.4	45.2	2,124	2,374	89%
SINCE INCEPTION	127,353,815	29.6	41.5	51,176	71,736	71%

FOOTNOTES

(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. R8-2003-008 ⁶																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
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																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				</

FOOTNOTES

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

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

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

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

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

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

NPDES = National Pollutant Discharge Elimination System

WDR = Waste Discharge Requirement

N/A = Not applicable

mL = Milliliter

VOA = Volatile organic analysis

HCl = Hydrochloric acid

HNO₃ = Nitric acid

H₂SO₄ = Sulfuric acid

nm = Nanometers

EPA = U.S. Environmental Protection Agency

SIM = Selected ion monitoring

SM = Standard Method

L = Liter

poly = High density polyethylene bottle

Amber = Amber glass bottle

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

Compound	Date	Units	MW-21 ^(M)	MW-29	EW-01 ^(M)	EW-02	INF*	PF	POX	CBT	CEFF
Extraction Rate	6/1/16 - 8/31/16	gpm	0	10	0	40	--	--	--	--	--
1,1,2-Trichloroethane (5 ug/L MCL)	06/01/16	ug/L	--	1.0	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	06/16/16	ug/L	--	1.2	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	07/07/16	ug/L	--	1.1	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	07/21/16	ug/L	--	1.1	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	08/01/16	ug/L	11	--	1.7	--	--	--	--	--	--
	08/04/16	ug/L	--	1.0	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	08/18/16	ug/L	--	0.9	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
1,1-Dichloroethane (5 ug/L MCL)	06/01/16	ug/L	--	3.5	--	<0.5	0.95	--	0.69	<0.5	<0.5
	06/16/16	ug/L	--	3.2	--	<0.5	0.94	--	0.71	<0.5	<0.5
	07/07/16	ug/L	--	3.3	--	<0.5	0.96	--	0.61	<0.5	<0.5
	07/21/16	ug/L	--	4.1	--	<0.5	1.1	--	0.71	<0.5	<0.5
	08/01/16	ug/L	27	--	5.6	--	--	--	--	--	--
	08/04/16	ug/L	--	3.3	--	<0.5	1.0	--	0.57	0.51	<0.5
	08/18/16	ug/L	--	2.6	--	<0.5	0.69	--	<0.5	<0.5	<0.5
1,1-Dichloroethene (6 ug/L MCL)	06/01/16	ug/L	--	250	--	31	71	--	<0.5	<0.5	<0.5
	06/16/16	ug/L	--	240	--	36	75	--	<0.5	<0.5	<0.5
	07/07/16	ug/L	--	310	--	30	88	--	<0.5	<0.5	<0.5
	07/21/16	ug/L	--	410	--	38	84	--	<0.5	<0.5	<0.5
	08/01/16	ug/L	1,500	--	430	--	--	--	--	--	--
	08/04/16	ug/L	--	250	--	25	79	--	<0.5	<0.5	<0.5
	08/18/16	ug/L	--	250	--	26	63	--	<0.5	<0.5	<0.5
1,2-Dichloroethane (0.5 ug/L MCL)	06/01/16	ug/L	--	0.62	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	06/16/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	07/07/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	07/21/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	08/01/16	ug/L	4.2	--	<0.50	--	--	--	--	--	--
	08/04/16	ug/L	--	0.57	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	08/18/16	ug/L	--	0.51	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene (6 ug/L MCL)	06/01/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	06/16/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	07/07/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	07/21/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	08/01/16	ug/L	<2.5	--	<0.50	--	--	--	--	--	--
	08/04/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	08/18/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
Tetrachloroethene (5 ug/L MCL)	06/01/16	ug/L	--	0.96	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	06/16/16	ug/L	--	1.1	--	<0.5	0.87	--	<0.5	<0.5	<0.5
	07/07/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	07/21/16	ug/L	--	<0.5	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	08/01/16	ug/L	4.5	--	<0.50	--	--	--	--	--	--
	08/04/16	ug/L	--	0.88	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
	08/18/16	ug/L	--	0.63	--	<0.5	<0.5	--	<0.5	<0.5	<0.5
Trichloroethene (5 ug/L MCL)	06/01/16	ug/L	--	2.8	--	<0.5	0.67	--	<0.5	<0.5	<0.5
	06/16/16	ug/L	--	2.5	--	<0.5	0.69	--	<0.5	<0.5	<0.5
	07/07/16	ug/L	--	3.1	--	<0.5	0.8	--	<0.5	<0.5	<0.5
	07/21/16	ug/L	--	2.8	--	<0.5	0.69	--	<0.5	<0.5	<0.5
	08/01/16	ug/L	20	--	0.76	--	--	--	--	--	--
	08/04/16	ug/L	--	3.1	--	<0.5	0.78	--	<0.5	<0.5	<0.5
	08/18/16	ug/L	--	2.5	--	<0.5	0.58	--	<0.5	<0.5	<0.5
1,4-Dioxane (1 ug/L California Notification Level)	06/01/16	ug/L	--	110	--	12	33	--	0.2	<0.2	<0.2
	06/16/16	ug/L	--	82	--	7.6	24	--	<0.2	<0.2	<0.2
	07/07/16	ug/L	--	95	--	7.3	25	--	<0.2	<0.2	<0.2
	07/21/16	ug/L	--	81	--	8.4	21	--	<0.2	<0.2	<0.2
	08/01/16	ug/L	250	--	90	--	--	--	--	--	--
	08/04/16	ug/L	--	77	--	6.5	21	--	<0.2	<0.2	<0.2
	08/18/16	ug/L	--	86	--	9.6	26	--	<0.2	<0.2	<0.2
Bromide	06/01/16	mg/L	--	0.88	--	0.43	0.48	--	--	--	--
	07/07/16	mg/L	--	0.66	--	0.32	0.29	--	--	--	--
	08/04/16	mg/L	--	0.52	--	0.24	0.3	--	--	--	--
Bromate (10 ug/L MCL)	06/01/16	ug/L	--	--	--	--	--	--	<0.5	--	--
	07/07/16	ug/L	--	--	--	--	--	--	<0.5	--	--
	08/04/16	ug/L	--	--	--	--	--	--	<0.5	--	--
Total Non-Filterable-Residue	06/01/16	mg/L	--	--	--	--	--	<1.0	<0.5	--	--
	07/07/16	mg/L	--	--	--	--	--	<1.0	--	--	--
	08/04/16	mg/L	--	--	--	--	--	<1.0	--	--	--
Total Filterable Residue (500 mg/L MCL)	06/01/16	mg/L	--	830	--	640	690	--	680	--	700

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

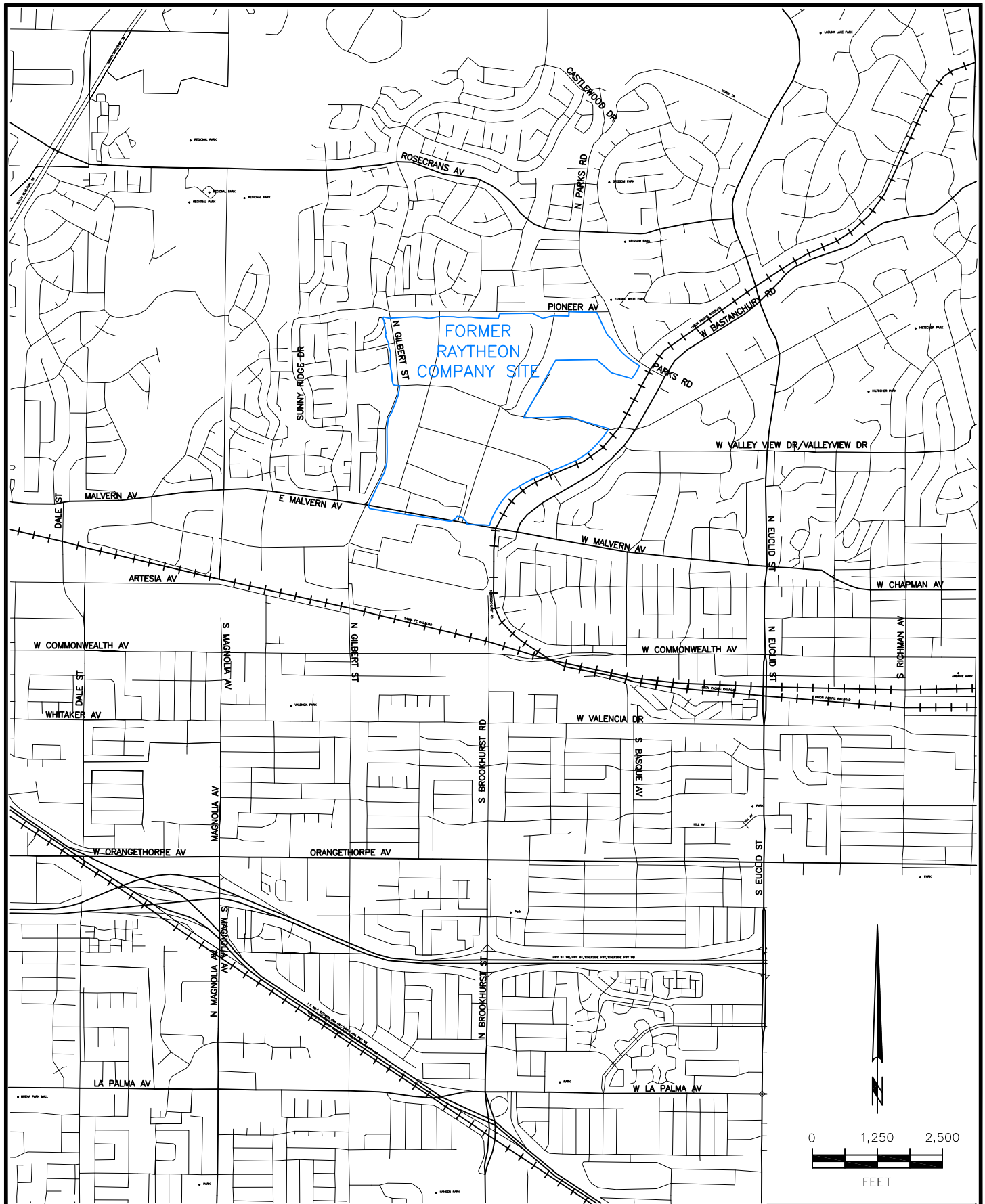
POX = Post UV/Chem-Ox

CBT = Carbon Breakthrough

CEFF = Carbon Effluent

FIGURES

May 11, 2011 - 10:09am ADE - T: \2011\500-599\532 Raytheon\Hydrogeology\H+A Base\Maps\410-8281.dwg



HARGIS+ASSOCIATES, INC.
Hydrogeology/Engineering

FIGURE 1. SITE LOCATION

5/11 | RPT NO. 532.31 | 410-8281 | A

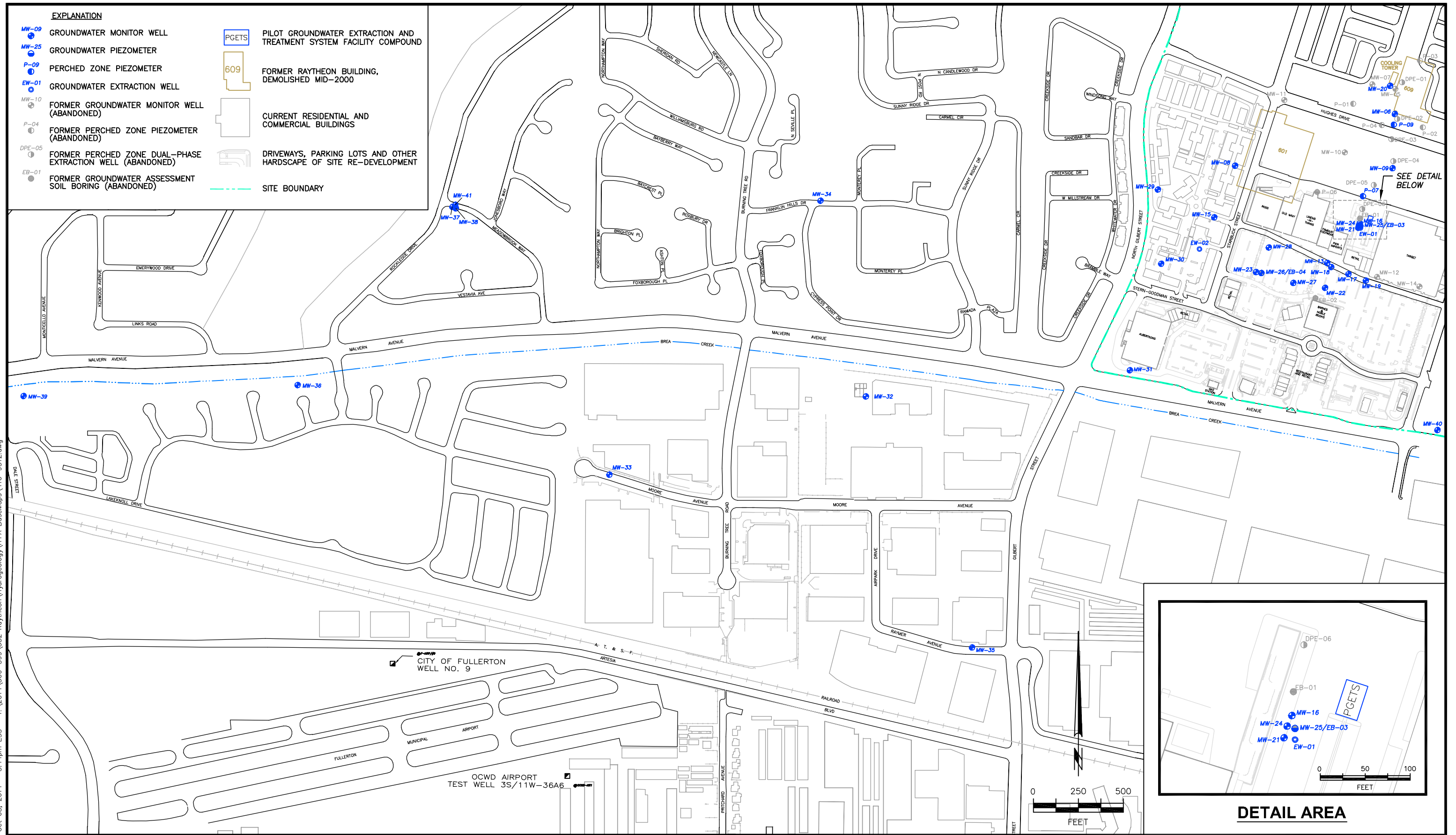


FIGURE 2.
WELL AND PIEZOMETER LOCATIONS

Sep 20, 2016 - 2:00pm ess - T: \\2016\500-599\532 Raytheon\Hydrogeology\Water Lvl\220-2349.dwg

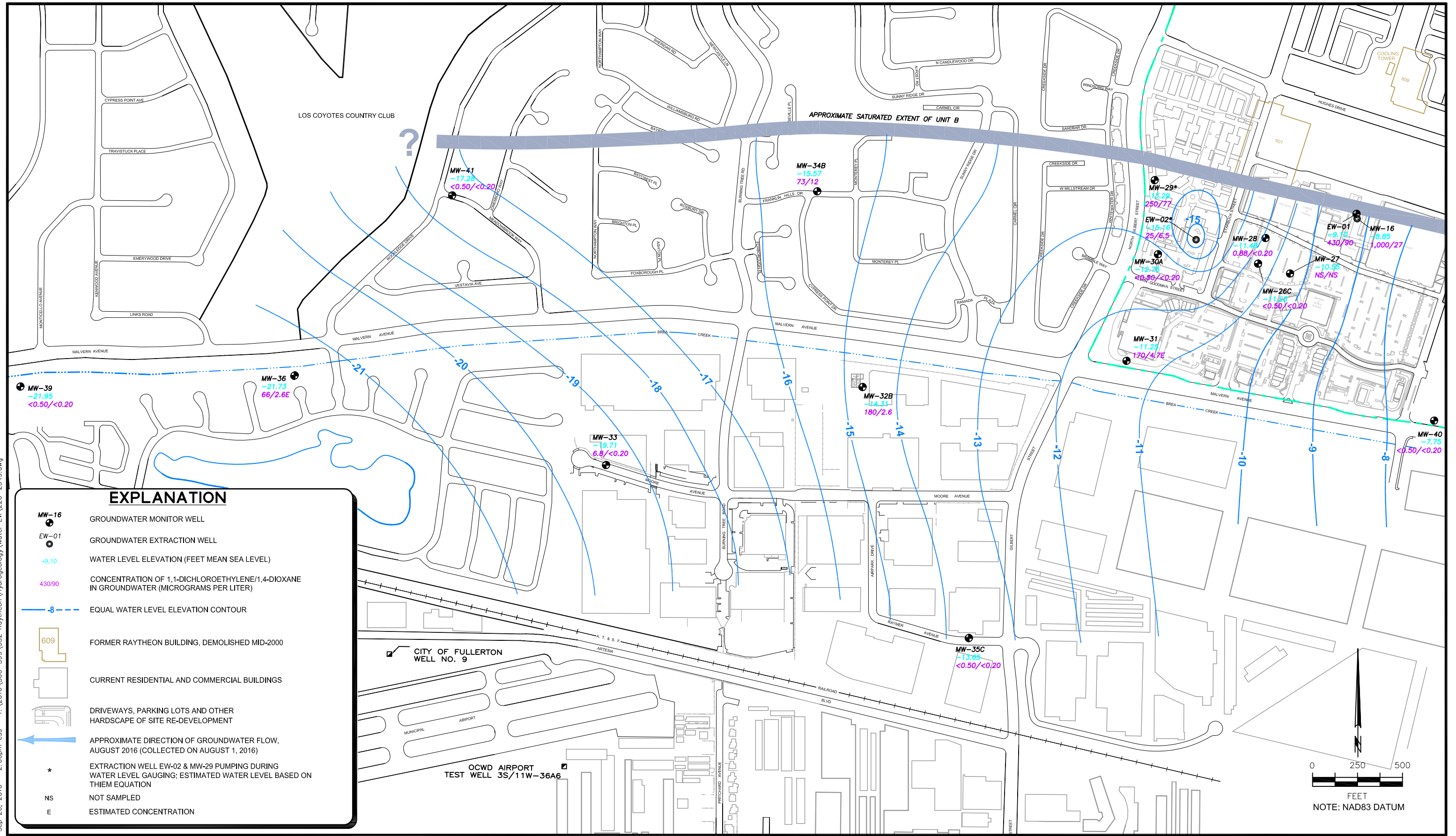


FIGURE 3.
WATER LEVEL AND WATER QUALITY UNIT B
AUGUST 2016

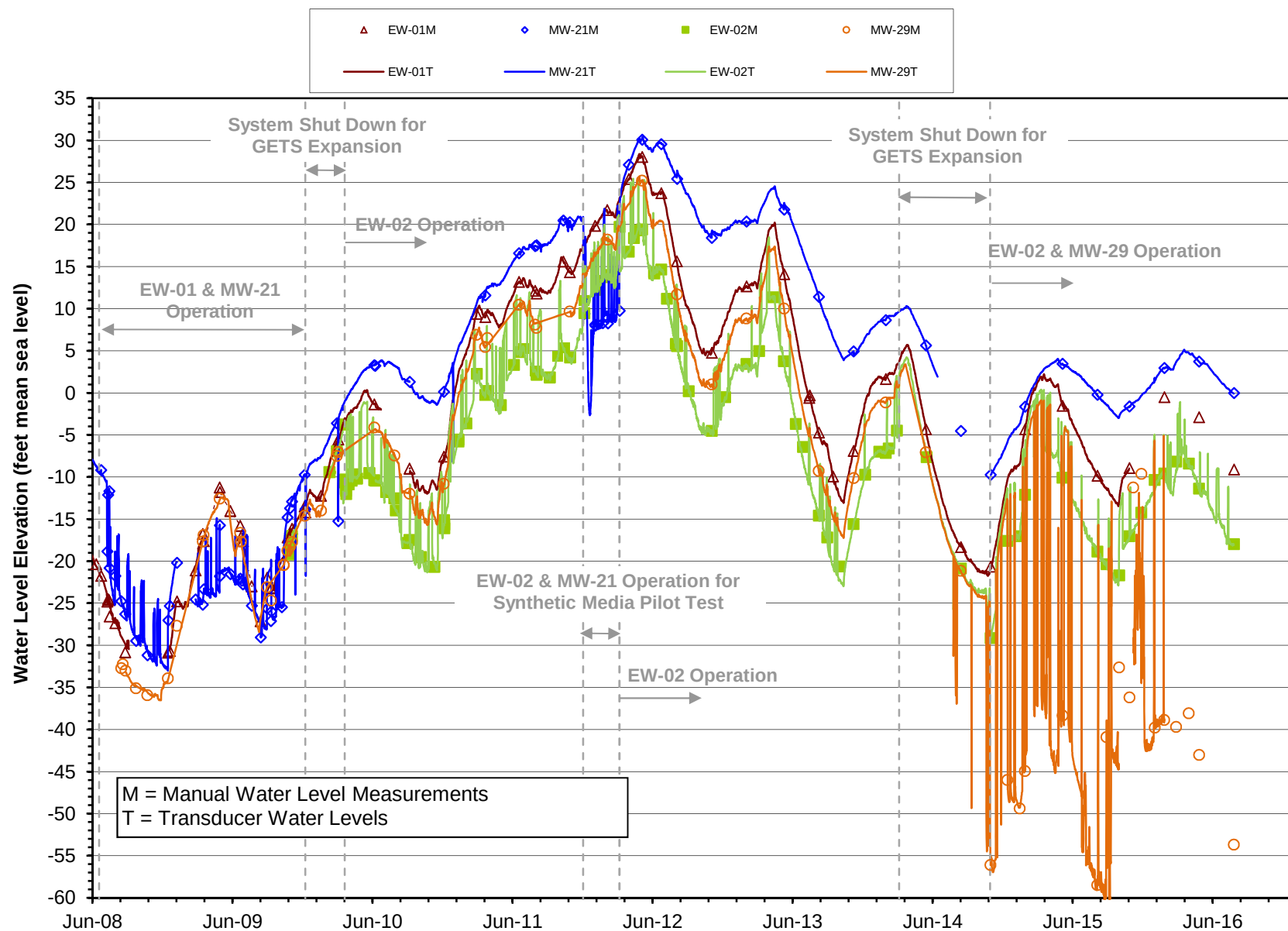


FIGURE 4.
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM OPERATION
AND EXTRACTION WELL WATER LEVELS

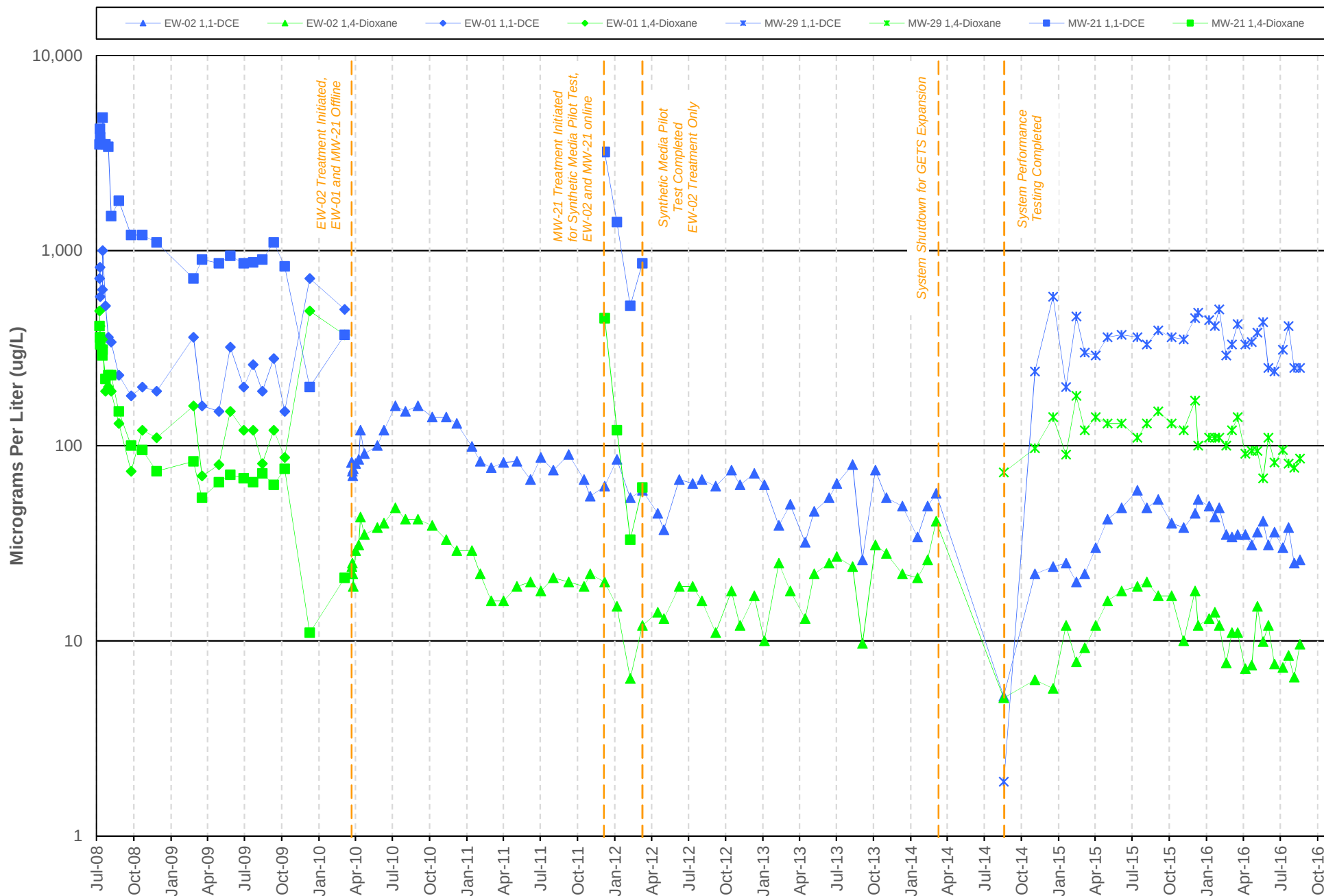


FIGURE 5.
1,1-DICHLOROETHYLENE AND 1,4-DIOXANE CONCENTRATIONS IN EXTRACTION WELLS

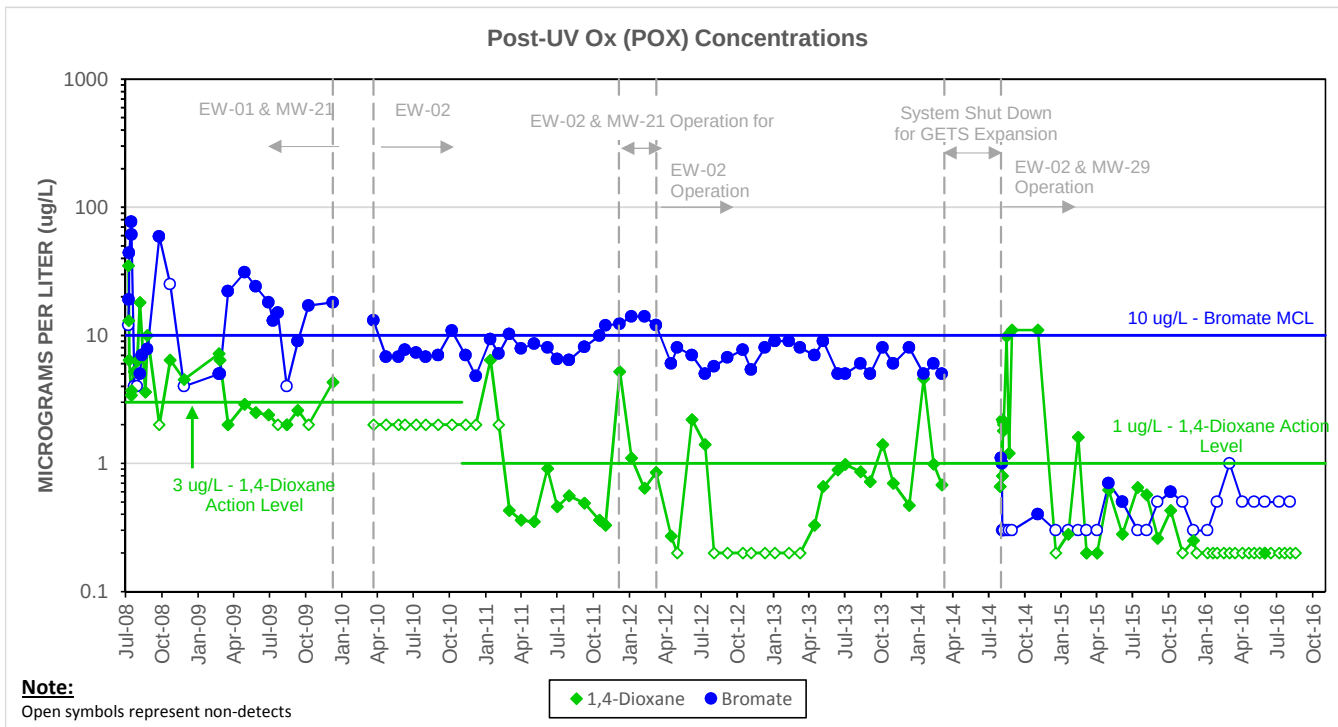
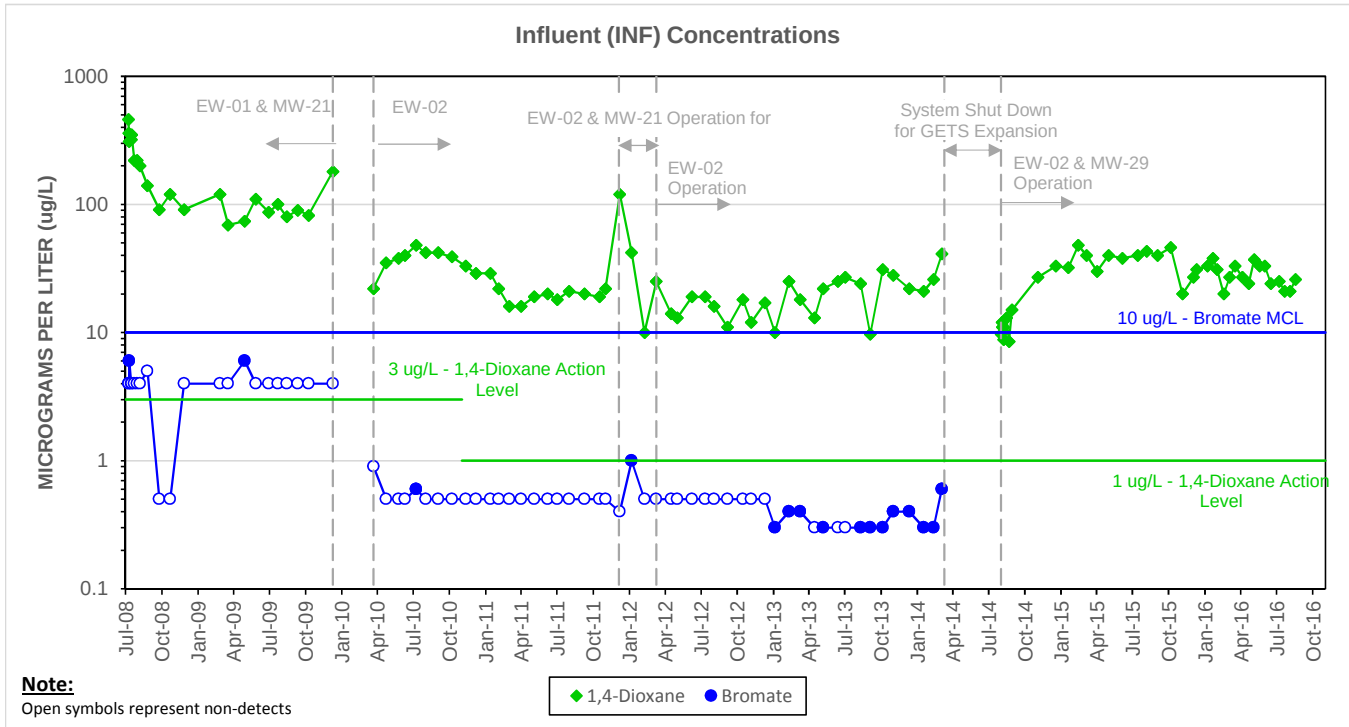


FIGURE 6.
1,4-DIOXANE AND BROMATE IN INFLUENT AND POST-OXIDATION SAMPLES

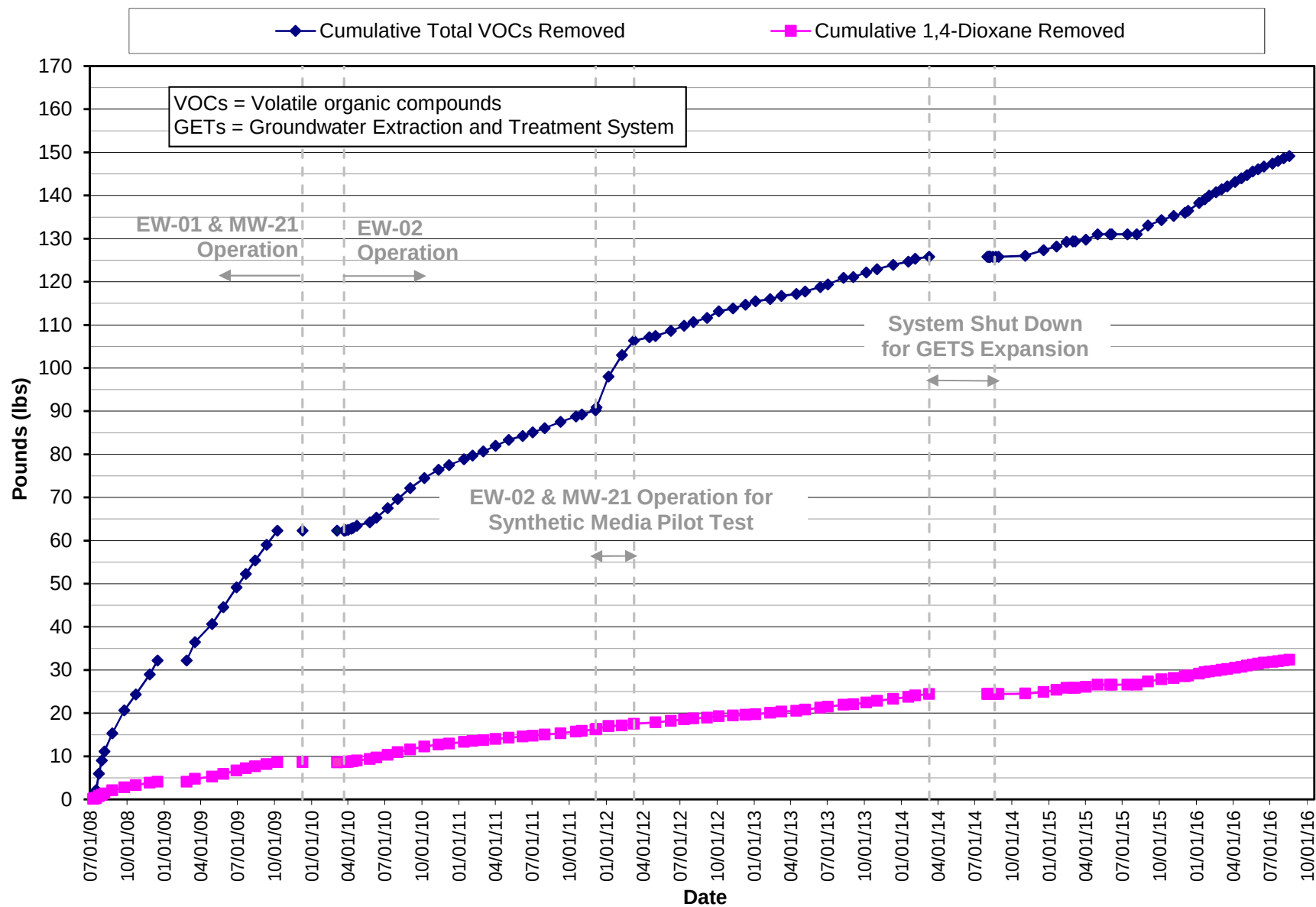


FIGURE 7.
PILOT GROUNDWATER EXTRACTION AND TREATMENT SYSTEM MASS REMOVAL



HARGIS + ASSOCIATES, INC.

APPENDIX A

GROUNDWATER SAMPLING FIELD FORMS

AUGUST 2016

SEMIANNUAL GROUNDWATER MONITORING
FIELD NOTEBOOK
LOW VOLUME MONITOR WELLS

RAYTHEON COMPANY

532.30

1901 MALVERN AVE.
FULLERTON, CALIFORNIA



HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

DAILY FIELD SAFETY BRIEFING ATTENDANCE SHEET

Date: 8/3/16

Location: Fullerton, CA

Presented by: Tyler Evans

A. GENERAL INTRODUCTION

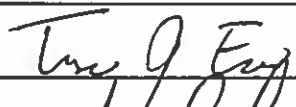
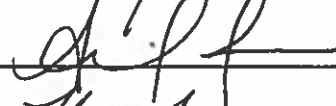
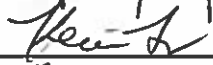
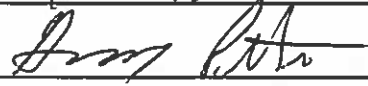
1. Location of site Health and Safety Plan (HSP) and ensure everyone has read the site HSP.
2. Primary hazards and controls (chemical, physical, and biological).
3. Sanitation and decontamination (potable water, nonpotable water, toilet, sink, shower).
4. General Site Rules.
5. Emergency Response Plan (location where emergency telephone numbers and hospital route posted, shower, first aid kit, fire extinguisher, alarm system, evacuation, meeting place, contingencies, upwind).
6. Establish buddy system.

B. SPECIFIC PRECAUTIONS FOR DAY'S ACTIVITIES

C. ON-SITE ORGANIZATION AND COORDINATION

D. OTHER TOPICS:

ATTENDEE LIST

PRINT NAME	SIGNATURE	COMPANY	DATE
Tyler Evans		HHA	8/3/16
Arielle Fender		H+A, INC.	8/3/16
Kevin Fong		HHA	8/3/16
Greg Peterson		H + A Inc	8/3/16

DAILY FIELD SAFETY BRIEFING ATTENDANCE SHEET

Date: 8/4/16
Location: Fullerton, CA
Presented by: Tyler Evans

A. GENERAL INTRODUCTION

1. Location of site Health and Safety Plan (HSP) and ensure everyone has read the site HSP.
2. Primary hazards and controls (chemical, physical, and biological).
3. Sanitation and decontamination (potable water, nonpotable water, toilet, sink, shower).
4. General Site Rules.
5. Emergency Response Plan (location where emergency telephone numbers and hospital route posted, shower, first aid kit, fire extinguisher, alarm system, evacuation, meeting place, contingencies, upwind).
6. Establish buddy system.

B. SPECIFIC PRECAUTIONS FOR DAY'S ACTIVITIES

C. ON-SITE ORGANIZATION AND COORDINATION

D. OTHER TOPICS:

ATTENDEE LIST

PRINT NAME	SIGNATURE	COMPANY	DATE
Tyler Evans		H+A	8/4/16
Arielle Fennel		H+A	8/4/16

INSTRUMENT CALIBRATION LOG FOR GROUNDWATER SAMPLING: Temp + pH + EC + DO + ORP

[illegible]

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: August 2016

METHOD OF MEASUREMENT/SOUNDER IDENTIFIER: FLAT TAPE ELECTRIC SOUNDER # _____

PROJECT NUMBER: 532.30

WELL IDENTIFIER	DATE	TIME	MEASURING POINT	DEPTH TO WATER FROM REFERENCE POINT (+feet)	REFERENCE POINT ELEVATION (ft msl)	WATER LEVEL ELEVATION (ft msl)	May 2016 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL (± ft)	COMMENTS	INITIALS
P-07	08/ /16				142.31		113.73			
P-09	08/1/16	9:31	Toc	120.90	183.86	62.96	120.85	-0.05		KDF/GDP
MW-06	08/1/16	9:33	Toc	177.64	181.29	3.65	175.93	-1.71		↓
MW-08	08/ /16				155.91		147.26			
MW-09	08/1/16	9:24	Toc	176.08	180.10	4.02	174.55	-1.53		KDF/GDP
MW-13	08/1/16	8:20	Toc	144.12	141.84	-2.28	139.00	-5.12		↓
MW-15	08/ /16				144.95		148.58			
MW-16	08/ /16				142.40		145.40			
MW-17	08/1/16	8:11	Toc	147.70	142.70	-5.00	141.41	-6.29		KDF/GDP
MW-18	08/1/16	8:08	Toc	148.48	142.32	-6.16	142.11	-6.37		↓
MW-19	08/1/16	8:13	TOST	147.99	142.06	-5.93	141.70	-6.29		↓
MW-20	08/1/16	9:36	Toc	171.64	184.19	12.55	170.57	-1.07		↓
MW-21	08/ /16				141.18		137.45		Totalizer: Pumping?	
MW-22	08/1/16	9:15	TOST	144.28	138.65	-5.63	137.70	-6.58		KDF/GDP
MW-23	08/1/16	8:53	TOL	144.41	137.33	-7.08	138.15	-6.26		↓
MW-24	08/ /16				142.83		137.30			
MW-25	08/ /16				142.64		137.12			
MW-26A	08/1/16	8:45	TOL	139.86	137.04	-2.82	136.06	-3.80		KDF/GDP
MW-26B	08/1/16	8:46	Toc	142.03	137.05	-4.98	140.25	-1.75		↓
MW-26C	08/1/16	8:38	TOL	148.45	137.22	-11.23	142.49	-5.96		↓

 msl = Mean sea level
 ft = feet

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: August 2016

METHOD OF MEASUREMENT/SOUNDER IDENTIFIER: FLAT TAPE ELECTRIC SOUNDER # _____

PROJECT NUMBER: 532.30

WELL IDENTIFIER	DATE	TIME	MEASURING POINT	DEPTH TO WATER FROM REFERENCE POINT (+feet)	REFERENCE POINT ELEVATION (ft msl)	WATER LEVEL ELEVATION (ft msl)	May 2016 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL (± ft)	COMMENTS	INITIALS
MW-27	08/1/16	9:04	TOST	147.71	137.16	-10.55	141.80	-5.91		
MW-28	08/1/16	8:25	TOST	152.25	140.77	-11.48	146.00	-6.25	Double checked	
MW-29	08/1/16				139.81		162.82		Totalizer: Pumping?	
MW-30A	08/1/16				129.44		136.35			
MW-30B	08/1/16				129.39		133.68			
MW-31	08/1/16				119.60		126.00			
MW-32A	08/1/16				92.88		103.12			
MW-32B	08/1/16				92.89		102.73			
MW-32C	08/1/16				92.88		89.72			
MW-33	08/1/16				83.19		98.13			
MW-34A	08/1/16	11:03	TOST	165.49	153.25	-12.24	158.71	-6.78		
MW-34B	08/1/16	11:00	TOST	168.68	153.11	-15.57	162.00	-6.68		
MW-34C	08/1/16	11:08	TOST	166.20	153.29	-12.91	161.50	-4.70		
MW-35A	08/1/16				93.57		91.36			
MW-35B	08/1/16				93.56		98.47			
MW-35C	08/1/16				93.55		102.43			
MW-36	08/1/16	9:56	TOST	108.38	86.65	-21.73	103.14	-5.24	CODE: 3252	
MW-37	08/1/16	10:29	TOST	~~157.74~~ 106.70	155.60	-1.64	153.90	-3.34		
MW-38	08/1/16	10:34	TOST	169.55	154.90	-14.65	161.35	-8.2		
MW-39	08/1/16	10:09	TOST	106.20	84.25	-21.95	101.39	-4.81	CODE: 0781	

msl = Mean sea level
ft = feet

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: August 2016

METHOD OF MEASUREMENT/SOUNDER IDENTIFIER: FLAT TAPE ELECTRIC SOUNDER # _____

PROJECT NUMBER: 532.30

WELL IDENTIFIER	DATE	TIME	MEASURING POINT	DEPTH TO WATER FROM REFERENCE POINT (+feet)	REFERENCE POINT ELEVATION (ft msl)	WATER LEVEL ELEVATION (ft msl)	May 2016 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL (± ft)	COMMENTS	INITIALS
MW-40	08/ /16				123.40		126.37			
MW-41	08/ 1 /16	10:39	TOST	172.88	155.60	-17.28	166.35	-6.53		
EW-01	08/ /16				141.07		143.98		SOUNDING TUBE TO 172.65 Totalizer: Pumping?	
EW-02	08/ /16				132.97		144.39		Totalizer: Pumping?	

msl = Mean sea level
ft = feet

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ /2016

TASK: 532.30

WELL ID: MW-15

Time 13:25 Static DTW (ft below reference point)	150.30	Casing Volume (CV) (gallons) 3.49 3 CV (gallons) 10.46	Weather Conditions	Initials: KDF/GDP
Casing Total Depth (ft below reference point)	170.8	Purging Device Grundfos Sampling Device Del tubing	Time 13:25 Temp. 86	Begin Purge 13:30 End Purge 13:40
Water Column (feet)	20.5	Pump: Depth (ft brp) 167 Type MPI Voltage 115 HP 0.5	Skies Clear	Gallons Purged 12 CVs Purged 3.4
Casing Capacity (Diameter 2") (gallons per foot)	0.17	Monitor Well Recharge Rate: Slow Fast ☒	Wind (mph) 0 From -	DTW (ft brp) 151.12 Time 13:40

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)		
13:30				Pump	On					305	Q ≈ 2 gpm
13:32	151.75	2	0.57	22.5	7.22	1172	247.4	3.83	39.6	305	
13:33	151.36	4	1.15	22.8	7.20	1176	234.6	3.42	82.9	305	Pump off for 1 min
13:34	151.71	6	1.72	23.4	7.22	1134	227.5	3.61	57.7	305	Q ≈ 2 gpm
13:35	151.60	8	2.30	23.3	7.22	1091	228.2	3.86	10.22	305	
13:36	151.55	10	2.87	23.1	7.24	1038	223.6	3.82	6.61	305	
13:37	151.49	12	3.44	23.0	7.25	1005	221.7	3.77	3.68	305	
13:40				Pump	off						

SAMPLE COLLECTION SAMPLE TIME 13:38		
ANALYSIS	QUANTITY	TYPE
8260B VOCs	3	40 ml VOA
8270 SIM 1,4 dioxane		1 L Amber
8270 MOD 1,4 dioxane		1 L Amber
DUPLICATES / SPLITS / BLANKS?		Y ☐ N ☒
If yes, complete appropriate forms.		

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.)

Tubing left in well

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 1 /2016

TASK: 532.30

WELL ID: MW-08

Time <u>1415</u> Static DTW (ft below reference point)	<u>148.74</u>	Casing Volume (CV) (gallons) <u>2.95</u> 3 CV (gallons) <u>8.85</u>	Weather Conditions	Initials: <u>GAP/KDF</u>
Casing Total Depth (ft below reference point)	<u>166.10</u>	Purging Device <u>Grundfos</u> Sampling Device <u>Del tubing</u>	Time <u>1415</u> Temp. <u>86</u>	Begin Purge <u>1428</u> End Purge <u>1442</u>
Water Column (feet)	<u>17.36</u>	Pump: Depth (ft brp) <u>160</u> Type <u>Grundfos</u> Voltage _____ HP _____	Skies <u>Clear</u>	Gallons Purged <u>12</u> CVs Purged <u>1.36</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>0</u> From <u>-</u>	DTW (ft brp) <u>152.3</u> Time <u>1443</u>

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (°C)	pH	EC (U S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1428	148.74	0	0	—	—	Begin	Purge	—	—	285	Q ≈ 1 gpm
1430	152.92	1	~~1.03~~	25.1	7.11	1553	191.4	2.82	—	285	
1432	153.92	3	~~1.03~~ 3.4	23.6	7.35	1587	190.2	2.27	—	285	
1434	154.42	5	~~1.71~~ 5.7	24.3	7.41	1564	190.1	2.81	10.90	285	
1436	154.80	6	~~2.04~~ 6.8	24.6	7.44	1556	189.7	2.43	10.33	285	Pump turned off; upped Hz
1438	156.01	8	~~2.79~~ 8.0	25.7	8.02	1532	192.5	4.01	7.64	290	Pumped
14:40	157.95	10	~~3.39~~ 11.3	25.5	7.54	1459	190.1	2.30	10.6	290	
14:42	—	—	—	—	—	Pump off	—	—	—	—	

SAMPLE COLLECTION SAMPLE TIME 1440

ANALYSIS QUANTITY TYPE

8260B VOCs 3 40 ml VOA8270 SIM 1.4 dioxane 1 1 L Amber8270 MOD 1.4 dioxane 1 1 L Amber

DUPLICATES / SPLITS / BLANKS?

Y

If yes, complete appropriate forms.

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

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

Tubing left in well

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ /2016

TASK: 532.30

WELL ID: MW-18

Time <u>8:19</u> Static DTW (ft below reference point)	<u>148.56</u>	Casing Volume (CV) (gallons) <u>30.05</u> 3 CV (gallons) <u>90</u>	Weather Conditions	Initials: <u>KDF/GDP</u>
Casing Total Depth (ft below reference point)	<u>194.1</u>	Purging Device <u>Ground Abs</u> Sampling Device <u>Per tubing</u>	Time <u>8:19</u> Temp. <u>84</u>	Begin Purge <u>8:30</u> End Purge <u>9:23</u>
Water Column (feet)	<u>45.54</u>	Pump: Depth (ft brp) <u>192</u> Type <u>MPI</u> Voltage <u>115</u> HP <u>0.5</u>	Skies <u>Clear</u>	Gallons Purged <u>99.5</u> CVs Purged <u>3.1</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot)	<u>0.66</u>	Monitor Well Recharge Rate: Slow _____ Fast ☒	Wind (mph) <u>0</u> From <u>-</u>	DTW (ft brp) <u>158.39</u> Time <u>9:23</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)		
8:30	—	—	Pump	On	—	—	—	—	—	303	Q ≈ 1.5 gpm
8:35	156.78	7.5	0.25	22.3	7.37	980	30.6	2.64	4.42	311	Q ≈ 2 gpm
8:43	159.14	23.5	0.78	22.7	7.44	879	-0.6	1.50	2.29	311	
8:51	160.5	39.5	1.31	22.9	7.24	682	-30.1	1.53	1.65	311	
8:59	162.04	55.5	1.85	22.9	7.33	818	-19.6	2.61	0.87	315	Q ≈ 2 gpm
9:07	162.58	71.5	2.38	22.9	7.37	871	-21.5	4.06	2.08	315	
9:14	162.72	~~87.5~~ 85.5	2.85	22.9	7.39	920	-37.8	4.44	1.98	315	
9:21	162.72	99.5	3.1	22.9	7.40	930	-38.4	4.64	0.66	315	
9:23	—	—	Pump	Off	—	—	—	—	—	—	

SAMPLE COLLECTION SAMPLE TIME <u>9:22</u>		
ANALYSIS	QUANTITY	TYPE
8260B VOCs	<u>33</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.)

RR-080216 Tubing left in well

GROUNDWATER SAMPLING INFORMATION
DATE: 08/ 2 /2016

TASK: 532.30

WELL ID: MW-16

Time <u>9:49</u> Static DTW (ft below reference point) <u>151.28</u>	Casing Volume (CV) (gallons) <u>18</u> 3 CV (gallons) <u>54</u>	Weather Conditions Time <u>9:49</u> Temp. <u>84</u>	Initials: <u>GDP/KDJ</u>
Casing Total Depth (ft below reference point) <u>178.50</u>	Purging Device <u>Grundfos</u> Sampling Device <u>Del tubing</u>	Skies <u>Clear</u>	Begin Purge <u>958</u> End Purge <u>1045</u>
Water Column (feet) <u>27.22</u>	Pump: Depth (ft brp) <u>136.50</u> Type <u>Grundfos</u> Voltage _____ HP _____	Wind (mph) <u>0</u> From <u>✓</u>	Gallons Purged <u>70.5</u> CVs Purged <u>3.91</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot) <u>0.66</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	DTW (ft brp) <u>154.92</u> Time <u>1045</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)		
958					Pump On					303	Q ≈ 1.5
1002	152.31	6	0.33	22.9	7.86	820.5	-16.0	10.10	2.29	303	"DC BUS LOW" Alarm, Reset Pump
1008	155.56	15	0.83	23.6	7.69	823.	-26.7	4.24	2.75	303	
1014	157.70	24	1.33	23.8	7.71	816	-31.6	3.87	2.32	303	
1020	158.40	~~30.33~~ <u>1.83</u>	~~1.66~~	23.9	7.73	815	-35.4	4.00	3.92	303	Q ≈ 1.5
1026	159.17	42	2.33	23.9	7.76	816	-35.9	3.76	3.38	303	
1032	159.37	51	2.83	23.9	7.76	814	-35.1	3.91	2.03	303	
1038	158.85	60	3.33	24.0	7.78	810	-31.2	3.92	1.66	303	"DC BUS LOW" Alarm, Reset Pump
1045					Pump Off						

SAMPLE COLLECTION SAMPLE TIME <u>1041</u>		
ANALYSIS	QUANTITY	TYPE
8260B VOCs	<u>12.8</u>	40 ml VOA
8270 SIM 1,4 dioxane	<u>4.2</u>	1 L Amber
8270 MOD 1,4 dioxane		1 L Amber
DUPLICATES / SPLITS / BLANKS? <u>Y</u> 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.)

RB-080216 11:10
MW-1600 12:41
Tubing left in well

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 2 /2016

TASK: 532.30

WELL ID: MW-20

Time 1225 Static DTW (ft below reference point)	171.69	Casing Volume (CV) (gallons) 17.8 3 CV (gallons) 53.5	Weather Conditions	Initials: KDF/GDP
Casing Total Depth (ft below reference point)	198.2	Purging Device Grundfos Sampling Device Del. tubing	Time 12:07 Temp. 86	Begin Purge 1411 End Purge 1450
Water Column (feet)	26.51	Pump: Depth (ft brp) 196 Type Grundfos Voltage 240 HP 0.5	Skies Clear	Gallons Purged 58.5 CVs Purged 3.3
Casing Capacity (Diameter 4") (gallons per foot)	0.67	Monitor Well Recharge Rate: Slow Fast ☒	Wind (mph) 0 From -	DTW (ft brp) 176.50 Time 1451

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)		
1411				Pump	on					325	Q ≈ 1.5 gpm
1412	175.83	1.5	0.1	25.2	7.74	888	-29.5	6.24	24.5	325	
1418	177.30	10.5	0.59	24.3	7.74	864	-16.2	6.13	5.02	325	
1424	178.49	19.5	1.1	23.6	7.74	855	-1.9	6.56	2.59	325	
1430	178.70	28.5	1.6	23.8	7.73	854	0.5	5.24	2.60	325	
1436	178.95	37.5	2.1	23.7	7.72	857	4.7	5.42	3.17	325	
1442	179.17	46.5	2.6	23.9	7.73	856	6.4	5.62	1.46	325	
1448	179.28	55.5	3.1	23.8	7.71	855	9.4	6.53	1.80	325	
1450				Pump Stopped							

SAMPLE COLLECTION SAMPLE TIME 1449			AIR MONITORING PID/FID ppm: VAULT NA BKGD NA BREATHING ZONE NA DISCHARGE WATER NA			
ANALYSIS	QUANTITY	TYPE	NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
8260B VOCs	3	40 ml VOA				
8270 SIM 1,4 dioxane	1	1 L Amber				
8270 MOD 1,4 dioxane		1 L Amber				
DUPLICATES / SPLITS / BLANKS? Y (N)						
If yes, complete appropriate forms.						

GROUNDWATER SAMPLING INFORMATION
DATE: 08/ 2 /2016

TASK: 532.30

WELL ID: MW-26C

Time <u>1535</u> Static DTW (ft below reference point)	<u>148.15</u>	Casing Volume (CV) (gallons) <u>60</u> 3 CV (gallons) <u>180</u>	Weather Conditions Time <u>1535</u> Temp <u>86</u> Skies <u>Clear</u> Wind (mph) <u>0</u> From <u>✓</u>	Initials: <u>GAP/KDF</u> Begin Purge <u>1539</u> End Purge <u>1629</u> Gallons Purged <u>200</u> CVs Purged <u>3.35</u> DTW (ft brp) <u>148.31</u> Time <u>1630</u>
Casing Total Depth (ft below reference point)	<u>499</u>	Purging Device <u>Grundfos</u> Sampling Device <u>ded tubing</u>		
Water Column (feet)	<u>350.85</u>	Pump: Depth (ft brp) <u>200</u> Type <u>Grundfos</u> Voltage <u>HP</u>		
Casing Capacity (Diameter <u>2"</u>) (gallons per foot)	<u>0.17</u>	Monitor Well Recharge Rate: Slow <u>Fast</u> <u>X</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)		
1539											Begin Purge
1542	149.71	12	0.2	22.6	8.93	419.9	-279.7	1.09	5.93	400	Q ≈ 4 gpm
1549	149.80	40	0.66	22.5	8.96	432.8	-337.9	0.19	7.66	400	
1556	149.87	68	1.13	22.6	8.08	674	-224.7	0.76	3.88	400	
1604	149.90	100	1.60	22.6	7.99	681	-203.4	0.76	2.23	400	
1611	149.95	128	2.13	22.5	7.91	685	-178.6	0.84	1.16	400	
1619	149.65	160	2.66	22.5	7.91	687	-174.2	0.99	1.52	400	
1626	149.74	188	3.13	22.5	7.91	686	-178.0	0.98	2.07	400	
1629											Pump off

SAMPLE COLLECTION SAMPLE TIME 1628
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?
 If yes, complete appropriate forms.

Y

N

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

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 3 /2016

TASK: 532.30

WELL ID: MW-28

Time <u>820</u> Static DTW (ft below reference point)	<u>152.34</u>	Casing Volume (CV) (gallons) <u>29.7</u> 3 CV (gallons) <u>89.1</u>	Weather Conditions	Initials: <u>GDP/KDF</u>
Casing Total Depth (ft below reference point)	<u>375</u>	Purging Device <u>ded Pump</u> Sampling Device <u>0-10 pipe size</u>	Time <u>820</u> Temp. <u>75</u>	Begin Purge <u>825</u> End Purge <u>841</u>
Water Column (feet)	<u>45</u>	Pump: Depth (ft brp) <u>330</u> Type <u>gulfos</u> Voltage <u>240</u> HP	Skies <u>overcast</u>	Gallons Purged <u>104</u> CVs Purged <u>3.5</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot)	<u>0.6217</u>	Monitor Well Recharge Rate: Slow Fast	Wind (mph) <u>0</u> From <u>/</u>	DTW (ft brp) <u>152.45</u> Time <u>843</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)		
825											Q ≈ 6.5 gpm
826	158.49	6.5	6.22	22.9	7.66	942	-82.5	5.01	2.20	-	
828	158.63	19.5	0.66	21.7	7.60	1019	-58.6	6.51	5.14	-	
830	158.63	32.5	1.09	21.7	7.61	1038	-47.4	7.41	2.71	-	
832	158.58	42.9	1.44	21.7	7.60	1053	-26.8	7.86	3.08	-	
834	158.61	56.7	1.91	21.7	7.62	1056	-17.1	7.89	2.23	-	
836	158.66	70.1	2.36	21.7	7.64	1060	-13.6	7.83	1.69	-	
839	158.61	90.8	3.05	21.8	7.65	1060	-11.1	7.78	1.85	-	
841											Pump off

SAMPLE COLLECTION SAMPLE TIME 840

ANALYSIS QUANTITY TYPE

8260B VOCs 3 40 ml VOA8270 SIM 1.4 dioxane 1 1 L Amber8270 MOD 1.4 dioxane 1 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: 08/ 3 /2016

TASK: 532.30

WELL ID: MW-9

Time <u>905</u> Static DTW (ft below reference point) <u>176.15</u>	Casing Volume (CV) (gallons) <u>2.5</u> 3 CV (gallons) <u>7.6</u>	Weather Conditions Time <u>905</u> Temp. <u>78</u> Skies <u>overcast</u> Wind (mph) <u>0</u> From <u>✓</u>	Initials: <u>GDP/KDF</u>
Casing Total Depth (ft below reference point) <u>191</u>	Purging Device <u>Bailer</u> Sampling Device <u>Bailer</u>		Begin Purge <u>906</u> End Purge <u>1412</u>
Water Column (feet) <u>14.85</u>	Pump: Depth (ft brp) <u>-</u> Type <u>-</u> Voltage <u>-</u> HP <u>-</u>		Gallons Purged <u>7.8</u> CVs Purged <u>3.12</u>
Casing Capacity (Diameter <u>2"</u>) (gallons per foot) <u>6.17</u>	Monitor Well Recharge Rate: Slow <u>X</u> Fast <u>-</u>		DTW (ft brp) <u>176.10</u> Time <u>1416</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)		
906											Begin Bailing
1256	NM	0.25	0.1	25.3	7.33	2166	-11.9	3.34	2.25	-	Quick Bailer line is not
1312	NM	1	0.4	23.7	7.45	2170	-36.7	4.25	37.8	-	long enough, have to bail by hand
1318	NM	2	0.8	23.1	7.51	2163	-38.7	4.89	50.8	-	Added line to Quick Bailer
1327	NM	3	1.2	23.1	7.53	2180	-34.3	3.87	55.1	-	
1336	NM	4	1.6	23.2	7.54	2148	-21.8	3.91	102.1	-	
1344	NM	5	2	23.1	7.50	2157	-12.5	4.46	100.6	-	
1350	NM	6	2.4	23.0	7.47	2152	-17.9	2.95	92.0	-	
1357	NM	7	2.8	22.8	7.41	2157	-11.6	2.77	97.2	-	
1403	NM	7.8	3.12	23.0	7.55	2158	-20.8	3.82	61.1	-	

SAMPLE COLLECTION SAMPLE TIME <u>1404</u>		
ANALYSIS	QUANTITY	TYPE
8260B VOCs	<u>3</u>	40 ml VOA
8270 SIM 1,4 dioxane	<u>1</u>	1 L Amber
8270 MOD 1,4 dioxane		1 L Amber
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>(N)</u>		
If yes, complete appropriate forms.		

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

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

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 3 /2016

TASK: 532.30

WELL ID: MW-34A

Time <u>930</u> Static DTW (ft below reference point) <u>165.53</u>	Casing Volume (CV) <u>52.8</u> ~~75.5~~ 3 CV (gallons) <u>158.9</u> ~~227~~	Weather Conditions	Initials: <u>GDP/KDF</u>
Casing Total Depth (ft below reference point) <u>280</u>	Purging Device <u>Del pump</u> Sampling Device <u>0-10 pressure</u>	Time <u>930</u> Temp. <u>85</u>	Begin Purge <u>931</u> End Purge <u>947</u>
Water Column (feet) <u>80</u>	Pump: Depth (ft bwp) <u>200</u> Type <u>Grundfos</u> Voltage <u>240</u> HP	Skies <u>clear</u>	Gallons Purged <u>185</u> CVs Purged <u>3.5</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 bwp) <u>165.60</u> Time <u>948</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)		
931					Begin	Purge					Q ≈ 12 gpm
933	167.30	24	0.45	21.7	7.58	1180	-143.7	4.35	26.1	—	
935	167.30	49.6	0.94	21.7	7.58	1181	-184.0	4.37	54.5	—	
937	167.29	67.3	1.27	21.7	7.59	1133	-157.8	4.41	50.2	—	
939	167.32	98.4	1.86	21.7	7.59	1179	-137.8	4.35	31.7	—	
941	167.31	121.2	2.29	21.7	7.54	1179	-115.3	4.37	35.1	—	
943	167.31	147.3	2.79	21.7	7.59	1179	-122.3	4.37	33.3	—	
945	163.30	162.9	3.08	21.7	7.59	1180	-109.7	4.39	33.3	—	
947					Pump	off					

SAMPLE COLLECTION	SAMPLE TIME <u>946</u>
ANALYSIS	QUANTITY
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>
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: 08/ 3 /2016

TASK: 532.30

WELL ID: MW-34B

Time <u>955</u> Static DTW (ft below reference point) <u>168.71</u>	Casing Volume (CV) (gallons) <u>30.16</u> 3 CV (gallons) <u>150.5</u>	Weather Conditions Time <u>955</u> Temp <u>85</u>	Initials: <u>GDP/KDF</u>
Casing Total Depth (ft below reference point) <u>536</u>	Purging Device <u>2nd pump</u> Sampling Device <u>10-100 pressure</u>	Skies <u>clear</u>	Begin Purge <u>959</u> End Purge <u>1014</u>
Pump <u>green</u> Water Column (feet) <u>76</u>	Pump: Depth (ft bfp) <u>460</u> Type <u>ground for</u> Voltage <u>240</u> HP	Wind (mph) <u>0</u> From <u>1</u>	Gallons Purged <u>162</u> CVs Purged <u>3.22</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot) <u>0.66</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>		DTW (ft bfp) <u>168.97</u> Time <u>1014</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)		
959					Begin Purge						Q ≈ 12 gpm
1000	170.29	15	0.30	21.3	7.82	792	-67.2	21.9	8.85	—	
1002	170.33	41.5	0.83	21.8	7.81	810	-210.0	4.13	78.8	—	
1004	170.38	58.8	1.17	21.9	7.83	811	-188.5	4.39	57.2	—	
1006	170.41	88.5	1.76	22.0	7.81	809	-202.3	4.33	17.8	—	
10:08	170.50	111.7	2.22	22.0	7.81	808	-199.7	4.33	7.64	—	
10:10	170.50	128.5	2.56	22.1	7.80	834	-198.4	4.40	7.05	—	
10:12	170.52	152.8	3.05	22.0	7.81	810	-195.7	4.29	8.27	—	
1014						End Pump off					

SAMPLE COLLECTION SAMPLE TIME <u>10:13</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>+</u> 1 L Amber	
8270 MOD 1,4 dioxane <u>1</u> 1 L Amber	
DUPLICATES / SPLITS / BLANKS? Y (N)	
If yes, complete appropriate forms.	

GROUNDWATER SAMPLING INFORMATION
DATE: 08/ 3 /2016

TASK: 532.30

WELL ID: MW-34C

Time <u>11:08</u> Static DTW (ft below reference point)	166.48	Screen Casing Volume (CV) (gallons) <u>63.36</u> ^{SV} <u>190.88</u>	Weather Conditions
Casing Total Depth (ft below reference point)	576	Purging Device <u>Diaphragm Pump</u> Sampling Device <u>ND Pipetman</u>	Time <u>11:05</u> Temp. <u>83</u>
Water Column (feet)	96	Pump: Depth (ft brp) <u>410</u> Type <u>Grundfos</u> Voltage _____ HP _____	Skies <u>Clear</u>
Screen Casing Capacity (Diameter 4") (gallons per foot)	0.66	Monitor Well Recharge Rate: Slow _____ Fast ☒	Wind (mph) <u>0</u> From _____
			Initials: <u>KDF/GDP</u> Begin Purge <u>11:11</u> End Purge <u>11:33</u> Gallons Purged <u>200</u> CVs Purged <u>3.16</u> DTW (ft brp) <u>167.32</u> Time <u>11:33</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)		
11:11				Pump	On						Qx 10 gpm
11:13	WTM	20	0.05	22.7	7.91	950	-164.9	3.96	3.69	NA	
11:16		50	0.79	22.6	7.93	939	-164.4	3.28	3.24		ORP & DO sensors might need
11:19		80	1.26	22.5	7.93	939	-172.6	3.09	2.51		to be replaced.
11:22		110	1.74	22.5	7.94	935	-173.6	3.04	1.25		
11:26		150	2.37	22.3	7.94	926	-175.3	3.91	0.06		
11:29		180	2.84	22.2	7.90	902	-178.6	3.94	0.04		
11:31	✓	200	3.16	22.1	7.92	894	-186.4	3.98	0.06	✓	
11:32				Collected	Sample						
11:33				Pump	Off						

SAMPLE COLLECTION SAMPLE TIME <u>11:32</u> ANALYSIS <u>QUANTITY</u> <u>TYPE</u> 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	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: 08/ 3 /2016

TASK: 532.30

WELL ID: MW 31

Time <u>1444</u> Static DTW (ft below reference point) <u>131.29</u>	Casing Volume (CV) (gallons) <u>81</u> 3 CV (gallons) <u>243</u>	Weather Conditions	Initials: <u>GDP/KDF</u>
Casing Total Depth (ft below reference point) <u>996</u>	Purging Device <u>ded pump</u> Sampling Device <u>7000 pipe</u>	Time <u>1444</u> Temp. <u>87</u>	Begin Purge <u>1447</u> End Purge <u>1519</u>
Pump screen Water Column (feet) <u>54</u>	Pump: Depth (ft brp) <u>942</u> Type <u>Grundfos</u> Voltage <u>240</u> HP	Skies <u>clear</u>	Gallons Purged <u>278.7</u> CVs Purged <u>2.44</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>131.81</u> Time <u>15:22</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)		
1447					Begin	Purge					Q = 10 gpm 9 gpm
1449	133.88	13.2	0.16	21.9	8.36	731	-110.6	0.53	68.5	-	
1454	133.90	53.4	0.66	21.2	12.5	1547	-247.2	0.15	23.3	-	
1459	133.84	103.6	1.28	21.5	8.27	941	-189.8	0.32	17.0	-	
1503	133.91	137.8	1.7	21.5	8.23	890	-178.3	0.43	17.8	-	
1508	133.90	178.4	2.2	21.5	8.37	844	-177.5	0.61	13.3	-	
1512	133.88	214.5	2.65	21.5	8.59	827	-182.7	0.71	9.53	-	
1516	133.92	244.6	3.02	21.6	8.57	813	-179.8	0.79	6.53	-	
1519						Pump	off				

SAMPLE COLLECTION SAMPLE TIME 1517
ANALYSIS QUANTITY TYPE

8260B VOCs 9 40 ml VOA
8270 SIM 1,4 dioxane 3 1 L Amber
8270 MOD 1,4 dioxane 3 1 L Amber

DUPLICATES / SPLITS / BLANKS? 0 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.)

MW-3100 @ 16:19

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 3 /2016

TASK: 532.30

WELL ID: MW-30B

Time 1541 Static DTW (ft below reference point)	138.5	Casing Volume (CV) (gallons) 40	3 CV (gallons) 120	Weather Conditions	Initials: GDE/KDF
Casing Total Depth (ft below reference point)	619	Purging Device JED pump	Sampling Device 7000 Pipe Stand	Time 1541 Temp 87	Begin Purge 1542 End Purge 1611
Pump Green Water Column (feet)	99	Pump: Depth (ft bwp) 520 Type grout	Voltage 240 HP	Skies clear	Gallons Purged 122.0 CVs Purged 3.05
Casing Capacity (Diameter 3") (gallons per foot)	0.4	Monitor Well Recharge Rate: Slow	Fast X	Wind (mph) 0 From /	DTW (ft bwp) 146.24 Time 1612

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)		
1542											Q ≈ 4.6 gpm
1545	154.45	12.8	0.32	21.5	8.01	988	-143.5	0.24	3.99	-	
1549	156.44	29.9	0.75	21.7	7.90	1291	-152.7	3.25	4.62	-	
1553	157.64	50.1	1.25	21.8	7.71	1432	-89.4	4.43	2.88	-	
1557	158.29	65.7	1.64	21.8	7.87	991	-88.4	2.64	6.74	-	
1601	158.89	83.2	2.08	21.8	7.88	953	-89.2	2.36	13.4	-	
1606	160.50	105.6	2.63	21.9	7.85	958	-82.5	2.48	9.89	-	
1610	160.63	121.2	3.03	21.9	7.83	961	-78.8	2.33	6.34	-	
1611											End Purge

SAMPLE COLLECTION SAMPLE TIME 1611		
ANALYSIS	QUANTITY	TYPE
8260B VOCs	3	40 ml VOA
8270 SIM 1,4 dioxane	1	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: 08/ 3 /2016

TASK: 532.30

WELL ID: MW-30A

Time <u>1622</u> Static DTW (ft below reference point)	<u>142.34</u>	Casing Volume (CV) (gallons) <u>17.6</u> 3 CV (gallons) <u>52.8</u>	Weather Conditions	Initials: <u>GAP/KDP</u>
Casing Total Depth (ft below reference point)	<u>564</u>	Purging Device <u>ded pump</u> Sampling Device <u>0-10 pipe stand</u>	Time <u>1622</u> Temp. <u>85</u>	Begin Purge <u>1622</u> End Purge <u>1634</u>
<u>pump screen</u> Water Column (feet)	<u>44</u>	Pump: Depth (ft brp) <u>520</u> Type <u>Grundfos</u> Voltage <u>240</u> HP	Skies <u>clear</u>	Gallons Purged <u>60.6</u> CVs Purged <u>3.44</u>
Casing Capacity (Diameter <u>3"</u>) (gallons per foot)	<u>0.4</u>	Monitor Well Recharge Rate: Slow Fast <u>X</u>	Wind (mph) <u>0</u> From <u>1</u>	DTW (ft brp) <u>142.49</u> Time <u>1635</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)		
1622											Begin Purge
1624	144.04	9.6	0.54	22.3	8.03	636	-44.6	0.75	13.4	-	
1625	144.05	15.3	0.87	21.7	8.10	606	-49.4	0.34	4.00	-	
1626	144.04	20.1	1.14	21.5	8.23	609	-214.4	0.28	2.95	-	
1627	144.04	25.4	1.44	21.5	8.11	609	-212.5	0.28	2.88	-	
1628	144.03	31.0	1.76	21.6	8.07	608	-206.6	0.26	2.96	-	
1629	144.06	35.3	2.00	21.6	8.06	605	-200.5	0.30	3.14	-	
1631	144.06	44.1	2.51	21.8	8.02	603	-188.1	0.37	2.50	-	
1633	144.05	54.2	3.08	21.8	8.00	602	-177.4	0.37	1.92	-	
1634											Pump off

SAMPLE COLLECTION SAMPLE TIME <u>1633</u>		
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 <u>(N)</u>		
If yes, complete appropriate forms.		

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

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

AUGUST 2016

SEMIANNUAL GROUNDWATER MONITORING
FIELD NOTEBOOK
LARGE VOLUME MONITOR WELLS

RAYTHEON COMPANY

532.30

1901 MALVERN AVE.
FULLERTON, CALIFORNIA



HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING



DAILY FIELD SAFETY BRIEFING ATTENDANCE SHEET

Date: 8/1/16

Location: FULLERTON, CA

Presented by: TJE

A. GENERAL INTRODUCTION

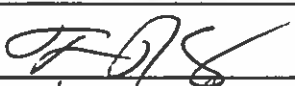
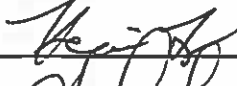
1. Location of site Health and Safety Plan (HSP) and ensure everyone has read the site HSP.
2. Primary hazards and controls (chemical, physical, and biological).
3. Sanitation and decontamination (potable water, nonpotable water, toilet, sink, shower).
4. General Site Rules.
5. Emergency Response Plan (location where emergency telephone numbers and hospital route posted, shower, first aid kit, fire extinguisher, alarm system, evacuation, meeting place, contingencies, upwind).
6. Establish buddy system.

B. SPECIFIC PRECAUTIONS FOR DAY'S ACTIVITIES

C. ON-SITE ORGANIZATION AND COORDINATION

D. OTHER TOPICS:

ATTENDEE LIST

PRINT NAME	SIGNATURE	COMPANY	DATE
Tyler Evans		H+A	8/1/16
Greg Petersen		H+A	8/1/16
Kevin Fong		H+A	8/1/16
Anielle Ferber		H+A	8/1/16

DAILY FIELD SAFETY BRIEFING ATTENDANCE SHEET

Date: 8/2/16

Location: Fullerton, CA

Presented by: Tyler Evans

A. GENERAL INTRODUCTION

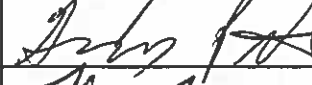
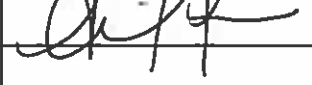
1. Location of site Health and Safety Plan (HSP) and ensure everyone has read the site HSP.
2. Primary hazards and controls (chemical, physical, and biological).
3. Sanitation and decontamination (potable water, nonpotable water, toilet, sink, shower).
4. General Site Rules.
5. Emergency Response Plan (location where emergency telephone numbers and hospital route posted, shower, first aid kit, fire extinguisher, alarm system, evacuation, meeting place, contingencies, upwind).
6. Establish buddy system.

B. SPECIFIC PRECAUTIONS FOR DAY'S ACTIVITIES

C. ON-SITE ORGANIZATION AND COORDINATION

D. OTHER TOPICS:

ATTENDEE LIST

PRINT NAME	SIGNATURE	COMPANY	DATE
Tyler Evans		H+A	8/2/16
Greg Peterson		H+A	8/2/16
Kevin Fong		H+A	8/2/16
Arielle Fender		H+A	08/02/16

INSTRUMENT CALIBRATION LOG FOR GROUNDWATER SAMPLING: Temp + pH + EC + DO + ORP

[illegible]



PROJECT NUMBER: 532.30

[illegible]



FIELD OBSERVATIONS

PROJECT NAME / LOCATION: _____

PROJECT NO.: 532 30

DATE: 08/01/10

INITIALS: ASF

0845 - ADD 10' SECTION TO TRANSDUCER LINE

MW-35B

MW-35C (?)

FIELD OBSERVATIONS

PROJECT NAME / LOCATION: _____

PROJECT NO.: 532 30

DATE: 08/02/16

INITIALS: ASF

1802 : MW-38 → DUCER PK LINE NOT ATTACHED FOUND

~ 10 FT

WL = 169.35 @ ~~1800~~ 1805

MW-38-080216

5 min interval

synchronization = OK

FUTURE START @ 08/02/16 @ 1815

TRANSCRIBED TO TRANSDUCER NOTEBOOK

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: August 2016

 METHOD OF MEASUREMENT/SOUNDER IDENTIFIER: FLAT TAPE ELECTRIC SOUNDER # ~~40520~~ 40521

PROJECT NUMBER: 532.30

WELL IDENTIFIER	DATE	TIME	MEASURING POINT	DEPTH TO WATER FROM REFERENCE POINT (+feet)	REFERENCE POINT ELEVATION (ft msl)	WATER LEVEL ELEVATION (ft msl)	May 2016 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL (± ft)	COMMENTS	INITIALS
P-07	08/1/16	1040	TOL	114.27	142.31	+28.04	113.73	-0.54		ASF/TJE
P-09	08/1/16	931	TOL	120.90	183.86	+62.96	120.85	-0.05		KDF/GDP
MW-06	08/1/16	933	TOL	177.64	181.29	+3.65	175.93	-1.71		↓
MW-08	08/1/16	1010	TOL	148.75	155.91	+7.16	147.26	-1.49		ASF/TJE
MW-09	08/1/16	924	TOL	176.08	180.10	4.02	174.55	-1.53		KDF/GDP
MW-13	08/1/16	820	TOL	144.12	141.84	-2.28	139.00	-5.12		↓
MW-15	08/1/16	1052	TOL	150.34	144.95	-5.39	148.58	-1.76		ASF/TJE
MW-16	08/1/16	1019	TOL	151.25	142.40	-10.34	145.40	-5.85		ASF/TJE
MW-17	08/1/16	811	TOL	147.70	142.70	-5.00	141.41	-6.29		KDF/GDP
MW-18	08/1/16	808	TOL	148.48	142.32	-6.16	142.11	-6.37		↓
MW-19	08/1/16	813	TOST	147.99	142.06	-5.93	141.70	-6.29		↓
MW-20	08/1/16	936	TOL	171.60	184.19	1255	170.57	-1.07		↓
MW-21	08/1/16	1027	TOST	141.20	141.18	-0.02	137.45	-3.75	Totalizer: 563193 Pumping? N	ASF/TJE
MW-22	08/1/16	915	TOST	144.28	138.65	-5.63	137.70	-6.58		KDF/GDP
MW-23	08/1/16	853	TOL	144.41	137.33	-7.08	138.15	-6.26		↓
MW-24	08/1/16	1024	TOST	139.10	142.83	+3.73	137.30	-1.80		ASF/TJE
MW-25	08/1/16	1021	TOL	140.58	142.64	+2.06	137.12	-3.46		ASF/TJE
MW-26A	08/1/16	845	TOL	139.86	137.04	-2.82	136.06	-3.80		KDF/GDP
MW-26B	08/1/16	846	TOL	142.03	137.05	-4.98	140.25	-1.75		↓
MW-26C	08/1/16	838	TOL	148.45	137.22	-11.23	142.49	-5.96		↓

msl = Mean sea level

ft = feet

STATIC WATER LEVEL DATA SHEET
 MONTH/YEAR: August 2016
 METHOD OF MEASUREMENT/SOUNDER IDENTIFIER: FLAT TAPE ELECTRIC SOUNDER #20521 / 211 506

PROJECT NUMBER: 532.30

WELL IDENTIFIER	DATE	TIME	MEASURING POINT	DEPTH TO WATER FROM REFERENCE POINT (+feet)	REFERENCE POINT ELEVATION (ft msl)	WATER LEVEL ELEVATION (ft msl)	May 2016 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL (± ft)	COMMENTS	INITIALS
MW-27	08/1/16	904	TOST	147.71	137.16	-10.55	141.80	-5.91		KDF/GDP
MW-28	08/1/16	825	TOST	152.25	140.77	-11.48	146.00	-6.25	Double checked	J
MW-29	08/1/16	1000	TOST	193.48	139.81	-53.67	182.82	-10.66	Totalizer: 7,316,857.6 y @ 10.18gpm	ASF/TJE
MW-30A	08/1/16	0951	TOST	142.20	129.44	-12.76	136.35	-5.85		ASF/TJE
MW-30B	08/1/16	0949	TOST	138.20	129.39	-8.81	133.68	-4.52		ASF/TJE
MW-31	08/1/16	0922	TOST	130.85	119.60	-11.25	126.00	-4.85		ASF/TJE
MW-32A	08/1/16	0814	TOST	107.97	92.88	-15.09	103.12	-4.85		TJE/ASF
MW-32B	08/1/16	0812	TOST	107.20	92.89	-14.31	102.73	-4.47		TJE/ASF
MW-32C	08/1/16	755	TOST	92.50	92.88	0.38	89.72	-2.78		TJE/ASF
MW-33	08/1/16	0907	TOST	102.90	83.19	-19.71	98.13	-4.77		ASF/TJE
MW-34A	08/1/16	1103	TOST	165.49	153.25	-12.24	158.71	-6.78		KDF/GDP
MW-34B	08/1/16	1100	TOST	168.68	153.11	-15.57	162.00	-6.68		J
MW-34C	08/1/16	1108	TOST	166.20	153.29	-12.91	161.50	-4.70		J
MW-35A	08/1/16	0842	TOST	95.55	93.57	-1.98	91.36	-4.19		ASF/TJE
MW-35B	08/1/16	0847	TOST	104.05	93.56	-10.49	98.47	-5.58		ASF/TJE
MW-35C	08/1/16	0849	TOST	107.20	93.55	-13.65	102.43	-4.77		ASF/TJE
MW-36	08/1/16	956	TOST	108.38	86.65	-21.73	103.14	-5.24	CODE: 3252	KDF/GDP
MW-37	08/1/16	1029	TOST	157.24	155.60	-1.64	153.90	-3.34		J
MW-38	08/1/16	1034	TOST	169.55	154.90	-14.65	161.35	-8.20		J
MW-39	08/1/16	1009	TOST	106.20	84.25	-21.95	101.39	-4.81	CODE: 0586	J

msl = Mean sea level
 ft = feet

STATIC WATER LEVEL DATA SHEET

MONTH/YEAR: August 2016

METHOD OF MEASUREMENT/SOUNDER IDENTIFIER: FLAT TAPE ELECTRIC SOUNDER #40521

PROJECT NUMBER: 532.30

WELL IDENTIFIER	DATE	TIME	MEASURING POINT	DEPTH TO WATER FROM REFERENCE POINT (+feet)	REFERENCE POINT ELEVATION (ft msl)	WATER LEVEL ELEVATION (ft msl)	May 2016 PREVIOUS DEPTH TO WATER (ft)	CHANGE IN WATER LEVEL (± ft)	COMMENTS	INITIALS
MW-40	08/1/16	1100	TOST	131.15	123.40	-7.75	126.37	-4.78		ASF/TJE
MW-41	08/1/16	1039	TOST	172.88	155.60	-17.28	166.35	-6.53		KDF/GJP
EW-01	08/1/16	1029	TOST	150.17	141.07	-9.10	143.98	-6.19	SOUNDING TUBE TO 172.65' Totalizer: ~~8~~ N/A Pumping? N	ASF/TJE
EW-02	08/1/16	0932	TOST	150.95	132.97	-17.98	144.39	-6.56	Totalizer: 8976432 Pumping? y	ASF/TJE

msl = Mean sea level
ft = feet

GROUNDWATER SAMPLING INFORMATION

DATE: 08/01/2016

TASK: 532.30

WELL ID: MW-21

Time <u>1205</u> Static DTW (ft below reference point)	<u>141.20</u>	Casing Volume (CV) (gallons) <u>1500</u> 3 CV (gallons) <u>180</u>	Weather Conditions	Initials: <u>ASF/TJE</u>
Casing Total Depth (ft below reference point)	<u>232</u>	Purging Device <u>ded. pump</u> Sampling Device <u>ded. sample port</u>	Time <u>1205</u> Temp. <u>85°F</u>	Begin Purge <u>1212</u> End Purge <u>1231</u>
Water Column (feet)	<u>90.80</u>	Pump: Depth (ft brp) <u>N/A</u> Type Voltage HP	Skies <u>CLEAR/SUNNY</u>	Gallons Purged <u>374</u> CVs Purged <u>6.23</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>SE</u>	DTW (ft brp) <u>144.51</u> Time <u>1231</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)		
1212	~~X~~	~~0~~ PUMP	~~0~~	ON							TOT = 563193 Q = 20 gpm
1214	153.18	53	0.88	24.5	7.11	1701	-28.3	2.04	20.9	-	TOT = 563246
1217	153.60	111	1.85	22.8	7.45	1755	-22.1	4.20	2.74	-	TOT = 563304
1220	153.91	177	2.95	22.4	7.50	1753	-38.0	4.18	0.83	-	TOT = 563370
1224	154.17	265	4.42	22.5	7.47	1755	-46.0	4.11	0.40	-	TOT = 563458
1227	154.25	299	4.98	22.5	7.49	1758	-45.1	4.07	0.97	-	TOT 563492 ; SAMPLE
1231	144.51	374	6.23	✓ PUMP	OFF						TOT = 563567

SAMPLE COLLECTION SAMPLE TIME 1230

ANALYSIS QUANTITY TYPE

8260B VOCs 5 40 ml VOA8270 SIM 1,4 dioxane 1 1 L Amber8270 MOD 1,4 dioxane 1 1 L Amber

DUPLICATES / SPLITS / BLANKS?

If yes, complete appropriate forms.

Y

N

AIR MONITORING PID/FID ppm: VAULT NA

BKGD NA

BREATHING ZONE NA

DISCHARGE WATER NA

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

TRIP BLANK ⇒ TB-080116 C 1200

GROUNDWATER SAMPLING INFORMATION

DATE: 08/01 /2016TASK: 532.30WELL ID: EW-01

Time <u>1235</u> Static DTW (ft below reference point)	<u>150.11</u>	Casing Volume (CV) (gallons) <u>75</u> 3 CV (gallons) <u>75</u>	Weather Conditions	Initials: <u>ASF/TJE</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>1235</u> Temp. <u>85° F</u>	Begin Purge <u>1234</u> End Purge <u>1250</u>
Water Column (feet)	<u>37.89</u>	Pump: Depth (ft brp) <u>NA</u> Type _____ Voltage _____ HP _____	Skies <u>CLEAR, SUNNY</u>	Gallons Purged <u>112</u> CVs Purged <u>4.48</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>05</u> From <u>EE</u>	DTW (ft brp) <u>150.25</u> Time <u>1250</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)		
1234	150.11	0	0	—	PUMP	ON	—	—	—	—	Q ≈ 7 gpm
1235	150.63	7	0.28	24.0	7.50	1148	-42.3	9.04	5.97	—	
1237	150.69	21	0.84	22.9	7.56	1087	-44.0	9.56	0.67	—	
1239	150.69	35	1.40	22.6	7.59	1080	-49.1	9.63	0.35	—	
1241	150.69	49	1.96	23.7	7.60	1082	-44.7	9.35	1.36	—	
1243	150.69	63	2.52	22.9	7.61	1084	-46.5	9.68	0.03	—	
1245	150.71	77	3.08	23.9	7.59	1090	-49.3	9.43	0.09	—	↓ ; SAMPLE
1250	150.25	112	4.48	—	PUMP	OFF	—	—	—	—	

SAMPLE COLLECTION SAMPLE TIME 1245

ANALYSIS	QUANTITY	TYPE
8260B VOCs	<u>9</u>	40 ml VOA
8270 SIM 1,4 dioxane	<u>3</u>	1 L Amber
8270 MOD 1,4 dioxane	<u>3</u>	1 L Amber

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

(Y)

N

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

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

MS/MSD COLLECTED

GROUNDWATER SAMPLING INFORMATION

DATE: 08/02/2016

TASK: 532.30

WELL ID: MW-32A

Time 8:00 Static DTW (ft below reference point)	108.11	SCREEN SV	Casing Volume (CV) (gallons) 207	3 CV (gallons) 021	Weather Conditions	Initials: ASE/TJE
Casing Total Depth (ft below reference point)	905	Purging Device Ded. pump	Sampling Device No. pipe stand	Time 0755 Temp. 70°F	Begin Purge 0804 End Purge 0910	
SCREEN Water Column (feet)	345	Pump: Depth (ft brp) 510	Type Grounds voltage 240 HP	Skies OVERCAST	Gallons Purged 148 CVs Purged 3.13	
Casing Capacity (Diameter 4") (gallons per foot)	0.60	Monitor Well Recharge Rate: Slow	Fast X	Wind (mph) 0 From N/A	DTW (ft brp) 108.45	Time 0910

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)		
0804	108.11	0	0	PUMP ON							Q ≈ 10 GPM
0805	109.37	11	0.05	20.7	7.47	786	-3.8	0.91	4.66	-	Q ≈ 10 gpm
0818	109.42	139	0.67	21.0	7.56	799	24.2	0.68	0.53	-	Q ≈ 10 gpm
0830	109.45	255	1.23	21.1	7.56	804	38.0	1.12	1.78	-	Q ≈ 10 gpm
0843	109.51	391	1.89	21.2	7.56	801	48.5	1.07	1.06	-	Q ≈ 10 gpm
0855	109.53	507	2.45	21.2	7.55	801	49.8	1.10	1.17	-	Q ≈ 10 gpm
0907	109.53	622	3.00	21.2	7.56	801	53.2	1.13	0.58	-	Q ≈ 10 gpm ; SAMPLE
0910	108.45	648	3.13	PUMP OFF							

SAMPLE COLLECTION SAMPLE TIME 0910
ANALYSIS QUANTITY TYPE

8260B VOCs 3 40 ml VOA
8270 SIM 1,4 dioxane 1 1 L Amber
8270 MOD 1,4 dioxane 8 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: 08/02/2016

TASK: 532.30

WELL ID: MW-32C

Time 0915 Static DTW (ft below reference point)	92.62	Casing Volume (CV) (gallons) 318	3 CV (gallons) 954	Weather Conditions	Initials: ASFTJE
Casing Total Depth (ft below reference point)	1090	Purging Device Ded Pump	Sampling Device APESTAND	Time 0915 Temp 75°F	Begin Purge 0915 End Purge 1100
Water Column (feet)	530	Pump: Depth (ft brp) 500	Type GNUMPS	Skies CLEAR	Gallons Purged 979 CVs Purged 3.08
Casing Capacity (Diameter 4") (gallons per foot)	0.66	Monitor Well Recharge Rate: Slow	Fast X	Wind (mph) 0-5 From E	DTW (ft brp) 38+ Time 1100

Time	Depth to Water	Volume Purged (Gallons)	Casing Volumes Purged	...FIELD PARAMETERS...						Pump Frequency Hz	COMMENTS
				Temp. (C)	pH	EC (uS/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
0915	92.62	0	0	PUMP	ON						Q ≈ 9 gpm
0918	115.75	16.7	0.05	20.7	8.59	435.9	192.6	0.73	1.15	-	Q ≈ 9 gpm
0940	143.11	214	0.67	21.2	8.30	444.4	-162.7	0.29	0.35	-	Q ≈ 9 gpm
1000	146.01	395	1.24	21.6	8.34	443.8	-136.4	0.30	1.60	-	Q ≈ 9 gpm
1020	147.55	574	1.81	21.6	8.35	444.8	-134.5	0.30	1.47	-	Q ≈ 9 gpm
1040	148.81	743	2.34	21.7	8.33	443.4	-111.7	0.30	0.75	-	
1104	150.00	954	3.00	21.7	8.31	444.4	-50.4	0.31	1.12	-	↓ ; SAMPLE
1106	138+	979	3.08	PUMP	OFF						

SAMPLE COLLECTION SAMPLE TIME 1105

ANALYSIS QUANTITY TYPE

8260B VOCs 3 40 ml VOA

8270 SIM 1,4 dioxane 1 1 L Amber

8270 MOD 1,4 dioxane 1 1 L Amber

DUPLICATES / SPLITS / BLANKS?

Y

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: 08/02/2016

TASK: 532.30

WELL ID: MW-32B

Time 1120 Static DTW (ft below reference point) 107.45	Casing Volume (GV) (gallons) 264	SN 791	Weather Conditions	Initials: ASF/TJE
Casing Total Depth (ft below reference point) 999	Purging Device ded pump	Sampling Device ded pipe stand	Time 1120 Temp 85°F	Begin Purge 1133 End Purge 1257
SCREEN Water Column (feet) 436	Pump: Depth (ft brp) 560 Type Fmudflts Voltage HP		Skies CLEAR	Gallons Purged 810 CVs Purged 3.07
Casing Capacity (Diameter 4") (gallons per foot) 0.60	Monitor Well Recharge Rate: Slow Fast X		Wind (mph) 8 From N/A	DTW (ft brp) 113+ Time 1257

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)		
1133	107.45	8	8	1	PUMP	ON					Q ≈ 10 gpm
1134	118.59	14	0.05	20.9	8.19	850	-183.5	0.25	3.05	-	Q ≈ 10 gpm
1150	120.19	154	0.58	21.2	7.89	822	-163.3	0.24	2.52	-	Q ≈ 10 gpm
1200	20.45	264	1.0	21.4	7.89	836	-112.2	0.25	3.42	-	MW-32B 1SV Sample taken
1217	120.71	429	1.63	21.6	7.88	855	-94.8	0.33	4.17	-	
1235	120.85	588	2.23	21.9	7.89	851	-100.5	0.33	0.49	-	
1245	120.87	690	2.61	21.6	7.89	852	-107.7	0.34	0.54	-	
1255	120.94	791	3.00	21.7	7.90	850	-105.7	0.33	0.26	-	SAMPLE
1257	113+	810	3.07	+	PUMP	OFF					

SAMPLE COLLECTION SAMPLE TIME 1255	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 40 ml VOA	SAMPLE TAKEN @ 1SV => MW-32B-1SV @ 1200			
8270 SIM 1.4 dioxane 1 L Amber				
8270 MOD 1.4 dioxane 1 L Amber				
DUPLICATES / SPLITS / BLANKS? Y N				

GROUNDWATER SAMPLING INFORMATION

DATE: 08/02/2016

TASK: 532.30

WELL ID: MW-33

Time 1315 Static DTW (ft below reference point)	103.10	SCREEN SV	SV	Weather Conditions	Initials: ASF/TJE
Casing Total Depth (ft below reference point)	1020	Casing Volume (CV) (gallons) 291	3 CV (gallons) 873	Time 1315 Temp. 85°F	Begin Purge 1315 End Purge 1443
SCREEN Water Column (feet)	485	Purging Device ded. pump	Sampling Device 0-10 area pipe stand	Skies CLEAR	Gallons Purged 895 CVs Purged 31
Casing Capacity (Diameter ") (gallons per foot)	0.60	Pump: Depth (ft brp) 535 Type Grundfos Voltage HP		Wind (mph) 0-5 From E	DTW (ft brp) 113.30 Time 1443
		Monitor Well Recharge Rate: Slow Fast X			

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)		
1315	103.10	0	0	PUMP ON							Q ≈ 10 gpm
1317	104.21	20.9	0.07	20.1	7.93	571	50.9	0.46	0.60	-	Q ≈ 10 gpm
1331	104.30	150	0.52	20.8	7.88	575	73.9	0.34	0.39	-	Q ≈ 9 gpm
1346	104.35	291	1.00	21.0	7.88	580	79.1	0.39	1.40	-	SAMPLE ⇒ MW-33-15VC1347
1405	104.35	495	1.70	21.1	7.84	577	58.7	0.77	0.15	-	Q ≈ 10 gpm
1425	104.35	719	2.47	21.3	7.86	578	49.5	0.78	0.31	-	Q ≈ 10 gpm
1440	104.35	873	3.00	21.9	7.86	578	42.4	0.71	0.0	-	SAMPLE
1443	113.30	895	3.1	PUMP OFF							

SAMPLE COLLECTION	SAMPLE TIME 1440
ANALYSIS	QUANTITY TYPE
8260B VOCs	6 40 ml VOA
8270 SIM 1,4 dioxane	2 1 L Amber
8270 MOD 1,4 dioxane	2 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.)

2 SAMPLE TAKEN @ 1 SV ⇒ MW-33-15VC1347

GROUNDWATER SAMPLING INFORMATION

DATE: 08/02/2016

TASK: 532.30

WELL ID: MW-35C

Time 1500 Static DTW (ft below reference point)	107.52	SCREEN SV	Casing Volume (CV) (gallons) 378	SV	1134	Weather Conditions	Initials: ASF/TJE
Casing Total Depth (ft below reference point)	1040	Purging Device ded pump	Sampling Device ND	HP		Time 1500 Temp. 80°F	Begin Purge 1501 End Purge 1626
SCREEN Water Column (feet)	630	Pump: Depth (ft brp) 410	Type Grundfos	Voltage	HP	Skies CLEAR	Gallons Purged 1152 CVs Purged 31
Casing Capacity (Diameter 4") (gallons per foot)	0.106	Monitor Well Recharge Rate: Slow	Fast	X		Wind (mph) 0-5 From SE	DTW (ft brp) 107.83 Time 1626

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)		
1501	107.52	Ø	Ø	—	PUMP ON	—	—	—	—	—	Q ≈ 12.5 gpm
1503	110.08	24	0.06	20.2	7.55	827	-2.7	1.61	1.44	—	
1521	110.15	273	0.72	21.5	7.74	712	33.0	2.04	1.19	—	Q ≈ 13 gpm
1538	110.25	520	1.38	22.0	7.75	714	44.5	1.65	1.03	—	Q ≈ 14 gpm
1553	110.25	745	1.97	21.9	7.76	710	53.0	2.01	3.05	—	
1608	110.25	920	2.43	22.5	7.77	711	59.8	1.92	1.26	—	
1624	110.25	1134	3.00	24.4	7.77	712	64.7	2.10	2.27	—	SAMPLE
1626	107.83	1152	3.1	PUMP OFF	—	—	—	—	—	—	

SAMPLE COLLECTION SAMPLE TIME 1625

ANALYSIS QUANTITY TYPE

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

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

Y

N

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

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

TASK: 532.30

DATE: 08/5/2016

WELL ID: NW-39

Time <u>0825</u> Static DTW (ft below reference point)	<u>10630</u>	Casing Volume (CV) (gallons) <u>271</u>	<u>304</u> (gallons) <u>814</u>	Weather Conditions	Initials: <u>ASF/TJE</u>
Casing Total Depth (ft below reference point)	<u>1020</u>	Purging Device <u>ded. pump</u>	Sampling Device <u>ded. pipe stand</u>	Time <u>0825</u> Temp. <u>65°F</u>	Begin Purge <u>0854</u> End Purge <u>0957</u>
<u>SCREEN</u> Water Column (feet)	<u>452</u>	Pump: Depth (ft brp) <u>560</u> Type <u>Grundfos</u>	Voltage _____ HP _____	Skies <u>OVERCAST</u>	Gallons Purged <u>877</u> CVs Purged <u>3.24</u>
Casing Capacity (Diameter <u>4"</u>) (gallons per foot)	<u>0.60</u>	Monitor Well Recharge Rate: Slow _____ Fast <u>X</u>	Wind (mph) <u>0</u> From <u>N/A</u>	DTW (ft brp) <u>100.99</u> Time <u>0957</u>	

[illegible]

SAMPLE COLLECTION		SAMPLE TIME	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	9	40 ml VOA	DUPLICATE = MW-3900 C 1010 SPLIT = MW-39C 0955					
8270 SIM 1,4 dioxane	3	1 L Amber						
8270 MOD 1,4 dioxane	3	1 L Amber						
DUPLICATES SPLITS BLANKS?		☒ Y	☐ N					
If yes, complete appropriate forms.								

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 3 /2016

TASK: 532.30

WELL ID: MW-36

Time 1020 Static DTW (ft below reference point)	108.05	Casing Volume (SV) (gallons) 320	3 CV (gallons) 960	Weather Conditions	Initials: AGF/TJE
Casing Total Depth (ft below reference point)	994	Purging Device ded. pump	Sampling Device ded. pipe stand	Time 1020 Temp 75°F	Begin Purge 1031 End Purge 1208
SCREEN Water Column (feet)	534	Pump: Depth (ft brp) 460	Type Grundfos	Skies CLEAR	Gallons Purged 993 CVs Purged 3.10
Casing Capacity (Diameter 4" (gallons per foot))	0.60	Monitor Well Recharge Rate: Slow	Fast X	Wind (mph) 0 From N/A	DTW (ft brp) 108.95 Time 1208

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)		
1031	108.05	0	0	PUMP ON						—	Q ≈ 10 gpm
1032	110.75	10	0.03	21.4	7.67	839	3.6	15.00	1.51	—	Q ≈ 10 gpm
1047	110.80	164	0.51	21.2	7.70	773	-55.7	0.82	1.08	—	Q ≈ 10 gpm
1103	111.00	322	1.01	21.8	7.92	487.0	-44.6	1.87	3.07	—	SAMPLE Q1SV ⇒ MW-36-1SV
1120	111.11	500	1.56	21.9	7.82	629	-50.3	1.30	5.76	—	Q ≈ 10 gpm
1135	111.11	655	2.05	21.9	7.74	740	-39.4	1.00	1.49	—	↓
1150	111.11	807	2.52	21.9	7.71	778	-38.1	0.92	3.31	—	
1205	111.14	960	3.00	22.2	7.74	767	-21.9	1.10	0.11	—	SAMPLE
1208	108.95	993	3.10	PUMP OFF						—	

SAMPLE COLLECTION SAMPLE TIME 1205

ANALYSIS QUANTITY TYPE

8260B VOCs 12 40 ml VOA
 8270 SIM 1,4 dioxane 0 1 L Amber
 8270 MOD 1,4 dioxane 4 1 L Amber

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

Y

N

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

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

DIT SAMPLE TAKEN C 1SV ⇒ MW-36-1SV C 1105
 DUPLICATE ⇒ MW-3600 C 1230

GROUNDWATER SAMPLING INFORMATION

DATE: 08/ 3 /2016

TASK: 532.30

WELL ID: MW-37

Time <u>1300</u> Static DTW (ft below reference point)	<u>157.4</u>	Casing Volume (CV) (gallons) <u>180</u> 3 CV (gallons) <u>540</u>	Weather Conditions	Initials: <u>ASF/TJE</u>
Casing Total Depth (ft below reference point)	<u>820</u>	Purging Device <u>ded. pump</u> Sampling Device <u>NIS ded. p. stand</u>	Time <u>1305</u> Temp. <u>85°F</u>	Begin Purge <u>1303</u> End Purge <u>1348</u>
<u>SCREEN</u> Water Column (feet)	<u>300</u>	Pump: Depth (ft bpr) <u>520</u> Type <u>Grundfos</u> Voltage _____ HP _____	Skies <u>CLEAR</u>	Gallons Purged <u>577</u> CVs Purged <u>3.21</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>W/E</u>	DTW (ft bpr) <u>157.75</u> Time <u>1348</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)		
1303	157.41	0	0	—	PUMP	ON	—	—	—	—	
1304	160.38	25	0.14	22.8	7.80	615	35.1	1.47	5.17	—	Q ≈ 13 gpm
1312	160.62	119	0.66	22.7	8.00	480.6	-5.4	2.81	1.28	—	
1320	160.68	216	1.20	22.9	8.00	481.9	14.7	2.56	1.08	—	
1328	160.68	313	1.74	23.3	8.02	523	13.6	2.86	3.87	—	
1337	160.68	439	2.44	23.6	8.02	524	11.9	2.87	3.29	—	
1345	160.68	540	3.00	23.8	8.02	525	10.6	2.86	3.03	—	SAMPLE
1348	157.75	577	3.21	—	PUMP	OFF	—	—	—	—	

SAMPLE COLLECTION SAMPLE TIME 1345

ANALYSIS	QUANTITY	TYPE
8260B VOCs	<u>9</u>	40 ml VOA
8270 SIM 1,4 dioxane	<u>3</u>	1 L Amber
8270 MOD 1,4 dioxane	<u>0</u>	1 L Amber

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

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

→ MS/MSD COLLECTED

DUPLICATES / SPLITS / BLANKS? (Y) N

If yes, complete appropriate forms.

GROUNDWATER SAMPLING INFORMATION

DATE: 08/03/2016

TASK: 532.30

WELL ID: MW-38

Time <u>1405</u> Static DTW (ft below reference point) <u>109.70</u>	Casing Volume (CV) (gallons) <u>2620</u> 3 CV (gallons) <u>600</u>	Weather Conditions	Initials: <u>ASF/DE</u>
Casing Total Depth (ft below reference point) <u>200</u>	Purging Device <u>ded. pump</u> Sampling Device <u>pipestand</u>	Time <u>1405</u> Temp. <u>85°F</u>	Begin Purge <u>1417</u> End Purge <u>1440</u>
Water Column (feet) <u>30</u>	Pump: Depth (ft brp) <u>190</u> Type <u>Amorflex</u> Voltage <u>200</u> HP	Skies <u>clear</u>	Gallons Purged <u>64.1</u> CVs Purged <u>3.20</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>05</u> From <u>W</u>	DTW (ft brp) <u>109.59</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 (S/cm)	O.R.P. (mV)	D.O. (mg/L)	Turbidity (NTU)		
1417	109.70	0	0	PUMP	ON						Q ≈ 3.0 gpm
1420	109.84	5.5	0.275	23.8	7.42	896	1.2	2.97	1.70	-	
1423	109.82	15	0.75	22.5	7.38	949	11.5	1.84	1.04	-	Q ≈ 2.75 gpm
1427	109.82	30	1.5	22.5	7.40	941	10.7	1.48	1.44	-	Q ≈ 3.0 gpm
1430	109.82	39	1.95	22.5	7.40	941	18.5	1.39	0.60	-	
1433	109.82	46	2.3	22.5	7.40	942	19.7	1.35	0.23	-	
1437	109.82	60	3.00	22.5	7.40	942	21.5	1.36	0.30	-	SAMPLE
1440	109.59	64.1	3.20	PUMP	OFF						

SAMPLE COLLECTION TIME <u>1440</u>	
ANALYSIS	QUANTITY TYPE
8260B VOCs	3 40 ml VOA
8270 SIM 1,4 dioxane	1 L Amber
8270 MOD 1,4 dioxane	1 L Amber
DUPLICATES / SPLITS / BLANKS? Y <u>N</u>	

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: 08/03/2016

TASK: 532.30

WELL ID: MW-4041

Time <u>1455</u> Static DTW (ft below reference point)	<u>170.79</u> Casing Volume (CV) (gallons) <u>39</u> <u>3</u> CV (gallons) <u>110</u>	Weather Conditions	Initials: <u>ASF/TJE</u>
Casing Total Depth (ft below reference point)	<u>425</u> Purging Device <u>ded. pump</u> Sampling Device <u>0-10 ded. pipestand</u>	Time <u>1455</u> Temp. <u>85°F</u>	Begin Purge <u>1504</u> End Purge <u>1532</u>
<u>SCREEN</u> Water Column (feet)	<u>105</u> Pump: Depth (ft brp) <u>300</u> Type <u>Groutless</u> Voltage <u>240</u> HP	Skies <u>CLEAR</u>	Gallons Purged <u>202</u> CVs Purged <u>5</u>
Casing Capacity (Diameter <u>4</u> ") (gallons per foot)	<u>0.60</u> Monitor Well Recharge Rate: Slow Fast <u>K</u>	Wind (mph) <u>0-5</u> From <u>E</u>	DTW (ft brp) <u>175.55</u> Time <u>1532</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)		
1504	170.79	0	0	—	PUMP ON	—	—	—	—	—	Q ≈ 7 gpm
1506	181.00	12	0.31	22.5	7.07	1015	52.9	2.78	9.70	—	
1509	181.30	39	1.00	22.2	7.05	1025	15.6	3.44	31.0	—	
1512	181.30	59	1.51	22.3	7.04	1032	19.2	3.86	74	—	
1520	181.40	113	2.89	22.3	7.03	1032	40.0	4.10	64.8	—	Q ≈ 7 gpm
1524	181.42	141	3.61	22.3	7.03	1044	45.3	4.20	30.0	—	
1528	181.55	172	4.41	22.3	7.02	1034	51.6	4.17	15.5	—	
1529	181.55	180	4.64	22.3	7.03	1032	52.8	4.21	13.7	—	
1531	181.55	192	4.92	22.3	7.03	1035	55.4	4.17	14.7	—	SAMPLE
1532	175.55	202	5	—	PUMP OFF	—	—	—	—	—	

SAMPLE COLLECTION SAMPLE TIME <u>1531</u>		
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	<u>0</u>	1 L Amber
DUPLICATES / SPLITS / BLANKS? <u>Y</u> <u>(N)</u>		

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: 08/04/2016

TASK: 532.30

WELL ID: MW-40

Time 0740 Static DTW (ft below reference point)	131.75	SCREEN	Casing Volume (CV) (gallons) 75	SV 228	3 CV (gallons) 255	Weather Conditions	Initials: ASF/TJE
Casing Total Depth (ft below reference point)	470	Purging Device ded. pump	Sampling Device ND	Standard	Time 0730 Temp. 65°F	Begin Purge 0743 End Purge 0819	
SCREEN Water Column (feet)	50	Pump: Depth (ft brp) 420	Type Grundfos	Voltage 240	Skies OVERCAST	Gallons Purged 271	CVs Purged 36
Casing Capacity (Diameter 6") (gallons per foot)	1.5	Monitor Well Recharge Rate: Slow	Fast X		Wind (mph) 0-5 From SE	DTW (ft brp) 131.81	Time 819

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)		
0743	131.75	8	0.1	PUMP ON						1	Q ≈ 8 gpm
0744	132.37	8	0.11	21.0	7.10	611	-	-	0.86	-	using Parameter Cup ∴ DO#
0750	132.47	53	0.71	21.1	7.24	582	-	-	1.83	-	ORP not recorded
0755	132.50	87	1.2	21.3	7.37	612	-	-	1.27	-	
0800	132.50	126	1.7	21.3	7.34	612	-	-	0.47	-	
0805	132.50	160	2.1	21.3	7.38	614	-	-	0.62	-	
0811	132.47	216	2.9	21.4	7.34	615	-	-	0.80	-	
0813	132.47	225	3.0	21.4	7.38	617	-	-	0.17	-	Sample
0819	131.81	271	3.6	end							

SAMPLE COLLECTION SAMPLE TIME 0815		
ANALYSIS	QUANTITY	TYPE
8260B VOCs	15	40 ml VOA
8270 SIM 1,4 dioxane	5	1 L Amber
8270 MOD 1,4 dioxane	8	1 L Amber
DUPLICATES / SPLITS / BLANKS? <u>Y</u> N If yes, complete appropriate forms.		

AIR MONITORING PID/FID ppm: VAULT NA	BKGD NA	BREATHING ZONE NA	DISCHARGE WATER NA
NOTES (Color, odor, sand and silt content, factors possibly affecting samples, condition of vault, wellhead, sampling apparatus, etc.)			
SPLIT => 0815			
DUPLICATE => 0825 - MW-4000			
MS/MSD COLLECTED			



HARGIS + ASSOCIATES, INC.

APPENDIX B

LABORATORY ANALYTICAL REPORTS

GROUNDWATER SAMPLING ANALYTICAL RESULTS



WORK ORDER NUMBER: 16-08-0254

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Hargis + Associates, Inc.

Client Project Name: Raytheon Main / 532.30

Attention: Steve Netto
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122-6215

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

Approved for release on 08/10/2016 by:
Virendra Patel
Project Manager

ResultLink ▶

Email your PM ▶

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

Contents

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 Work Order Number: 16-08-0254

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Work Order Narrative

Work Order: 16-08-0254Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 08/03/16. They were assigned to Work Order 16-08-0254.

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:	16-08-0254
	9171 Towne Centre Drive, Suite 375	Project Name:	Raytheon Main / 532.30
	San Diego, CA 92122-6215	PO Number:	
		Date/Time Received:	08/03/16 17:38
		Number of Containers:	16

Attn: Steve Netto

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
MW-39	16-08-0254-1	08/03/16 09:55	4	Aqueous
MW-36	16-08-0254-2	08/03/16 12:05	4	Aqueous
TB-080216B	16-08-0254-3	08/02/16 07:30	4	Aqueous
MW-31	16-08-0254-4	08/03/16 15:17	4	Aqueous

Detections Summary

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

Work Order: 16-08-0254
 Project Name: Raytheon Main / 532.30
 Received: 08/03/16

Attn: Steve Netto

Page 1 of 1

Client SampleID

<u>Analyte</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>Units</u>	<u>Method</u>	<u>Extraction</u>
MW-36 (16-08-0254-2)						
1,1-Dichloroethene	93		1.0	ug/L	EPA 8260B	EPA 5030C
1,4-Dioxane	5.8		1.0	ug/L	EPA 8270C (M) Isotope Dilution	EPA 3510C
MW-31 (16-08-0254-4)						
1,1-Dichloroethane	1.5		1.0	ug/L	EPA 8260B	EPA 5030C
1,1-Dichloroethene	110		1.0	ug/L	EPA 8260B	EPA 5030C
Trichloroethene	5.7		1.0	ug/L	EPA 8260B	EPA 5030C
1,4-Dioxane	7.6		1.0	ug/L	EPA 8270C (M) Isotope Dilution	EPA 3510C

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

* MDL is shown

Analytical Report

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

Date Received: 08/03/16
 Work Order: 16-08-0254
 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-39	16-08-0254-1-D	08/03/16 09:55	Aqueous	GC/MS DDD	08/04/16	08/05/16 01:59	160804L08

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

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Nitrobenzene-d5	79	56-123	
1,4-Dioxane-d8(IDS-IS)	41	30-120	

MW-36	16-08-0254-2-D	08/03/16 12:05	Aqueous	GC/MS DDD	08/04/16	08/05/16 02:15	160804L08

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,4-Dioxane	5.8	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Nitrobenzene-d5	80	56-123	
1,4-Dioxane-d8(IDS-IS)	43	30-120	

MW-31	16-08-0254-4-D	08/03/16 15:17	Aqueous	GC/MS DDD	08/04/16	08/05/16 02:31	160804L08

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
1,4-Dioxane	7.6	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Nitrobenzene-d5	83	56-123	
1,4-Dioxane-d8(IDS-IS)	40	30-120	

Method Blank	099-16-216-792	N/A	Aqueous	GC/MS DDD	08/04/16	08/04/16 22:17	160804L08

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

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Nitrobenzene-d5	78	56-123	
1,4-Dioxane-d8(IDS-IS)	45	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: 08/03/16
 Work Order: 16-08-0254
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

Page 1 of 12

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-39	16-08-0254-1-A	08/03/16 09:55	Aqueous	GC/MS LL	08/04/16	08/04/16 16:43	160804L014

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

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

Analytical Report

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

Date Received: 08/03/16
 Work Order: 16-08-0254
 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	81	80-120	
Dibromofluoromethane	112	78-126	
1,2-Dichloroethane-d4	118	75-135	
Toluene-d8	97	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: 08/03/16
 Work Order: 16-08-0254
 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	16-08-0254-2-A	08/03/16 12:05	Aqueous	GC/MS LL	08/04/16	08/04/16 17:14	160804L014

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	93	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: 08/03/16
 Work Order: 16-08-0254
 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	81	80-120	
Dibromofluoromethane	114	78-126	
1,2-Dichloroethane-d4	118	75-135	
Toluene-d8	101	80-120	

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

Analytical Report

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

Date Received: 08/03/16
 Work Order: 16-08-0254
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
TB-080216B	16-08-0254-3-A	08/02/16 07:30	Aqueous	GC/MS LL	08/04/16	08/04/16 16:12	160804L014

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

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

Analytical Report

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

Date Received: 08/03/16
 Work Order: 16-08-0254
 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	82	80-120	
Dibromofluoromethane	111	78-126	
1,2-Dichloroethane-d4	115	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: 08/03/16
 Work Order: 16-08-0254
 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-31	16-08-0254-4-C	08/03/16 15:17	Aqueous	GC/MS LL	08/08/16	08/08/16 18:31	160808L004

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Acetone	ND	20	1.00	
Benzene	ND	0.50	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	1.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	1.0	1.00	
Bromomethane	ND	10	1.00	
2-Butanone	ND	10	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	0.50	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	5.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	10	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	1.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	1.0	1.00	
1,1-Dichloroethane	1.5	1.0	1.00	
1,2-Dichloroethane	ND	0.50	1.00	
1,1-Dichloroethene	110	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: 08/03/16
 Work Order: 16-08-0254
 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	5.7	1.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	5.0	1.00	
1,2,4-Trimethylbenzene	ND	1.0	1.00	
1,3,5-Trimethylbenzene	ND	1.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	0.50	1.00	
p/m-Xylene	ND	1.0	1.00	
o-Xylene	ND	1.0	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	82	80-120	
Dibromofluoromethane	110	78-126	
1,2-Dichloroethane-d4	118	75-135	
Toluene-d8	99	80-120	

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

Analytical Report

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

Date Received: 08/03/16
 Work Order: 16-08-0254
 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	099-14-001-21023	N/A	Aqueous	GC/MS LL	08/04/16	08/04/16 13:09	160804L014

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: 08/03/16
 Work Order: 16-08-0254
 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	109	78-126	
1,2-Dichloroethane-d4	116	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: 08/03/16
 Work Order: 16-08-0254
 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	099-14-001-21047	N/A	Aqueous	GC/MS LL	08/08/16	08/08/16 12:55	160808L004

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: 08/03/16
 Work Order: 16-08-0254
 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	113	78-126	
1,2-Dichloroethane-d4	120	75-135	
Toluene-d8	97	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: 08/03/16
Work Order: 16-08-0254
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
16-08-0249-6	Sample	Aqueous	GC/MS DDD	08/04/16	08/05/16 00:08	160804S08
16-08-0249-6	Matrix Spike	Aqueous	GC/MS DDD	08/04/16	08/04/16 22:49	160804S08
16-08-0249-6	Matrix Spike Duplicate	Aqueous	GC/MS DDD	08/04/16	08/04/16 23:05	160804S08

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	21.70	108	21.43	107	50-130	1	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: 08/03/16
Work Order: 16-08-0254
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
16-08-0199-2	Sample	Aqueous	GC/MS LL	08/04/16	08/04/16 14:10	160804S005
16-08-0199-2	Matrix Spike	Aqueous	GC/MS LL	08/04/16	08/04/16 14:41	160804S005
16-08-0199-2	Matrix Spike Duplicate	Aqueous	GC/MS LL	08/04/16	08/04/16 15:11	160804S005

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	53.46	107	54.21	108	74-122	1	0-21	
Carbon Tetrachloride	ND	50.00	60.04	120	61.22	122	60-144	2	0-21	
Chlorobenzene	ND	50.00	55.33	111	55.41	111	73-120	0	0-22	
1,2-Dibromoethane	ND	50.00	55.74	111	55.36	111	80-122	1	0-20	
1,2-Dichlorobenzene	ND	50.00	51.24	102	51.56	103	70-120	1	0-26	
1,2-Dichloroethane	ND	50.00	56.64	113	55.07	110	64-142	3	0-20	
1,1-Dichloroethene	ND	50.00	56.74	113	60.49	121	52-136	6	0-21	
Ethylbenzene	ND	50.00	58.56	117	57.58	115	77-125	2	0-24	
Toluene	ND	50.00	57.66	115	57.29	115	72-126	1	0-23	
Trichloroethene	ND	50.00	58.11	116	58.11	116	74-128	0	0-22	
Vinyl Chloride	ND	50.00	42.66	85	44.23	88	67-133	4	0-20	
p/m-Xylene	ND	100.0	118.4	118	116.9	117	63-129	1	0-25	
o-Xylene	ND	50.00	58.47	117	58.56	117	62-128	0	0-24	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	51.10	102	53.19	106	68-134	4	0-21	

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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: 08/03/16
Work Order: 16-08-0254
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
16-08-0266-13	Sample	Aqueous	GC/MS LL	08/08/16	08/08/16 13:26	160808S002
16-08-0266-13	Matrix Spike	Aqueous	GC/MS LL	08/08/16	08/08/16 13:56	160808S002
16-08-0266-13	Matrix Spike Duplicate	Aqueous	GC/MS LL	08/08/16	08/08/16 14:27	160808S002

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	20.55	100.0	126.8	106	127.8	107	74-122	1	0-21	
Carbon Tetrachloride	ND	100.0	124.1	124	122.0	122	60-144	2	0-21	
Chlorobenzene	ND	100.0	106.7	107	108.9	109	73-120	2	0-22	
1,2-Dibromoethane	ND	100.0	107.9	108	110.3	110	80-122	2	0-20	
1,2-Dichlorobenzene	ND	100.0	105.0	105	106.5	106	70-120	1	0-26	
1,2-Dichloroethane	ND	100.0	114.9	115	117.7	118	64-142	2	0-20	
1,1-Dichloroethene	ND	100.0	124.4	124	130.4	130	52-136	5	0-21	
Ethylbenzene	ND	100.0	114.3	114	116.6	117	77-125	2	0-24	
Toluene	8.703	100.0	123.6	115	122.5	114	72-126	1	0-23	
Trichloroethene	ND	100.0	114.4	114	118.6	119	74-128	4	0-22	
Vinyl Chloride	ND	100.0	78.62	79	80.66	81	67-133	3	0-20	
p/m-Xylene	6.157	200.0	235.1	114	240.6	117	63-129	2	0-25	
o-Xylene	ND	100.0	117.6	118	118.8	119	62-128	1	0-24	
Methyl-t-Butyl Ether (MTBE)	ND	100.0	107.6	108	111.9	112	68-134	4	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: 08/03/16
 Work Order: 16-08-0254
 Preparation: EPA 3510C
 Method: EPA 8270C (M) Isotope Dilution

Project: Raytheon Main / 532.30

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-216-792	LCS	Aqueous	GC/MS DDD	08/04/16	08/04/16 22:33	160804L08

<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	19.46	97	50-130	

Quality Control - LCS

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

Date Received: 08/03/16
 Work Order: 16-08-0254
 Preparation: EPA 5030C
 Method: EPA 8260B

Project: Raytheon Main / 532.30

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-001-21023	LCS	Aqueous	GC/MS LL	08/04/16	08/04/16 10:34	160804L014
Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	49.71	99	80-120	73-127	
Carbon Tetrachloride	50.00	54.90	110	67-139	55-151	
Chlorobenzene	50.00	52.02	104	78-120	71-127	
1,2-Dibromoethane	50.00	53.31	107	80-120	73-127	
1,2-Dichlorobenzene	50.00	50.54	101	63-129	52-140	
1,2-Dichloroethane	50.00	52.75	105	70-130	60-140	
1,1-Dichloroethene	50.00	53.95	108	66-126	56-136	
Ethylbenzene	50.00	53.17	106	80-123	73-130	
Toluene	50.00	52.92	106	80-120	73-127	
Trichloroethene	50.00	54.12	108	80-122	73-129	
Vinyl Chloride	50.00	42.71	85	70-130	60-140	
p/m-Xylene	100.0	109.2	109	75-123	67-131	
o-Xylene	50.00	54.56	109	74-122	66-130	
Methyl-t-Butyl Ether (MTBE)	50.00	52.58	105	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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Quality Control - LCS

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

Date Received: 08/03/16
 Work Order: 16-08-0254
 Preparation: EPA 5030C
 Method: EPA 8260B

Project: Raytheon Main / 532.30

Page 3 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-001-21047	LCS	Aqueous	GC/MS LL	08/08/16	08/08/16 10:22	160808L004
Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	49.44	99	80-120	73-127	
Carbon Tetrachloride	50.00	55.74	111	67-139	55-151	
Chlorobenzene	50.00	50.86	102	78-120	71-127	
1,2-Dibromoethane	50.00	51.34	103	80-120	73-127	
1,2-Dichlorobenzene	50.00	49.46	99	63-129	52-140	
1,2-Dichloroethane	50.00	53.10	106	70-130	60-140	
1,1-Dichloroethene	50.00	56.06	112	66-126	56-136	
Ethylbenzene	50.00	52.32	105	80-123	73-130	
Toluene	50.00	52.10	104	80-120	73-127	
Trichloroethene	50.00	53.65	107	80-122	73-129	
Vinyl Chloride	50.00	38.82	78	70-130	60-140	
p/m-Xylene	100.0	107.3	107	75-123	67-131	
o-Xylene	50.00	54.24	108	74-122	66-130	
Methyl-t-Butyl Ether (MTBE)	50.00	51.07	102	69-129	59-139	

Total number of LCS compounds: 14

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

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Sample Analysis Summary Report

Work Order: 16-08-0254

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


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

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

Glossary of Terms and Qualifiers

Work Order: 16-08-0254

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<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
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.

16-08-0254

Date: 08/02/16
Page 1 of 1

PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Chris Ross

QA Manager Steve Netto

Phone 858.455.6500

Fax 858.455.6533

Sampled By: <u>ASF/djp DE/2018</u>		SAMPLE COLLECTION		MATRIX		PRESERVATION		CONTAINERS		ANALYSIS REQUESTED		SPECIAL HANDLING		REMARKS
LAB ID	SAMPLE ID	Date	Time	Groundwater	Lab prepared water	Hydrochloric Acid (HCl)								
	<u>MW-10</u>	<u>08/02/16</u>		X										
1	<u>MW-39</u>	<u>08/03/16</u>	<u>0955</u>	X	X									
2	<u>MW-36</u>		<u>1206</u>	X	X									
3	<u>TB-080216B</u>	<u>08/02/16</u>	<u>0730</u>	X	X	X								
4	<u>MW-31</u>	<u>08/03/16</u>	<u>1517</u>	X	X									

Laboratory
ATL ECA
Attn: Rachelle Arada
9276 Walnut Ave
Signal Hill, CA 90755
562-889-4045
Attn: Vicendra Patel

Total number of containers per analysis: <u>11</u>				Total No. of Containers: <u>11</u>	
Relinquished By: / Company:		Date / Time	Received By: / Company		Date / Time
<u>Anne Fender / H+A, Inc.</u>		<u>8/3/16 1700</u>	<u>Jeff Chaddler / DCS</u>		<u>8-3-16 1700</u>
Relinquished By: / Company:		Date / Time	Received By: / Company		Date / Time
<u>Jeff Chaddler / DCS</u>		<u>8/3/16 1738</u>	<u>Danngyle ECA</u>		<u>8/3/16 17:38</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 6500
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.

Temperature on receipt

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: Hargis + Assoc.

DATE: 08 / 03 / 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): 2.7 °C (w/ CF): 2.7 °C; ☒ Blank ☐ Sample

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

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

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

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 659

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A

Checked by: 659

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☒ Not Present ☐ N/A

Checked by: 1017

SAMPLE CONDITION:

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

CONTAINER TYPE:

(Trip Blank Lot Number: _____)

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

☐ 125PB_{znna} ☐ 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: 1017

s = H₂SO₄, u = ultra-pure, znna = Zn (CH₃CO₂)₂ + NaOH

Reviewed by: 607



WORK ORDER NUMBER: 16-08-0307

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Hargis + Associates, Inc.

Client Project Name: Raytheon Main / 532.30

Attention: Steve Netto
9171 Towne Centre Drive
Suite 375
San Diego, CA 92122-6215

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

Approved for release on 08/10/2016 by:
Virendra Patel
Project Manager

ResultLink ▶

Email your PM ▶

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

Contents

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 Work Order Number: 16-08-0307

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Work Order Narrative

Work Order: 16-08-0307Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 08/04/16. They were assigned to Work Order 16-08-0307.

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:	16-08-0307
	9171 Towne Centre Drive, Suite 375	Project Name:	Raytheon Main / 532.30
	San Diego, CA 92122-6215	PO Number:	
		Date/Time Received:	08/04/16 12:15
		Number of Containers:	6

Attn: Steve Netto

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
TB-080416	16-08-0307-1	08/04/16 07:30	2	Aqueous
MW-40	16-08-0307-2	08/04/16 08:15	4	Aqueous

Analytical Report

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

Date Received: 08/04/16
 Work Order: 16-08-0307
 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-40	16-08-0307-2-D	08/04/16 08:15	Aqueous	GC/MS DDD	08/05/16	08/05/16 19:12	160805L12

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

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Nitrobenzene-d5	86	56-123	
1,4-Dioxane-d8(IDS-IS)	37	30-120	

Method Blank	099-16-216-793	N/A	Aqueous	GC/MS DDD	08/05/16	08/05/16 18:08	160805L12

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

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
Nitrobenzene-d5	86	56-123	
1,4-Dioxane-d8(IDS-IS)	48	30-120	

Return to Contents

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

Analytical Report

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

Date Received: 08/04/16
 Work Order: 16-08-0307
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

Page 1 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
TB-080416	16-08-0307-1-A	08/04/16 07:30	Aqueous	GC/MS RR	08/04/16	08/05/16 05:49	160804L048

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: 08/04/16
 Work Order: 16-08-0307
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

Page 2 of 6

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

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	98	80-120	
Dibromofluoromethane	111	78-126	
1,2-Dichloroethane-d4	95	75-135	
Toluene-d8	102	80-120	

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

Analytical Report

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

Date Received: 08/04/16
 Work Order: 16-08-0307
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

Page 3 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW-40	16-08-0307-2-A	08/04/16 08:15	Aqueous	GC/MS RR	08/04/16	08/05/16 08:42	160804L048

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: 08/04/16
 Work Order: 16-08-0307
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

Page 4 of 6

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

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	99	80-120	
Dibromofluoromethane	111	78-126	
1,2-Dichloroethane-d4	93	75-135	
Toluene-d8	101	80-120	

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

Analytical Report

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

Date Received: 08/04/16
 Work Order: 16-08-0307
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

Page 5 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-14-001-21036	N/A	Aqueous	GC/MS RR	08/04/16	08/05/16 05:14	160804L048

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: 08/04/16
 Work Order: 16-08-0307
 Preparation: EPA 5030C
 Method: EPA 8260B
 Units: ug/L

Project: Raytheon Main / 532.30

Page 6 of 6

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

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,4-Bromofluorobenzene	97	80-120	
Dibromofluoromethane	110	78-126	
1,2-Dichloroethane-d4	93	75-135	
Toluene-d8	101	80-120	

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



Calscience

Quality Control - Spike/Spike Duplicate

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

Date Received: 08/04/16
Work Order: 16-08-0307
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				
MW-40	Sample	Aqueous	GC/MS DDD	08/05/16	08/05/16 19:12	160805S12				
MW-40	Matrix Spike	Aqueous	GC/MS DDD	08/05/16	08/05/16 18:40	160805S12				
MW-40	Matrix Spike Duplicate	Aqueous	GC/MS DDD	08/05/16	08/05/16 18:56	160805S12				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
1,4-Dioxane	ND	20.00	19.18	96	19.76	99	50-130	3	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: 08/04/16
Work Order: 16-08-0307
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	MS/MSD Batch Number				
16-08-0312-2	Sample	Aqueous	GC/MS RR	08/04/16	08/05/16 09:17	160804S023				
16-08-0312-2	Matrix Spike	Aqueous	GC/MS RR	08/04/16	08/05/16 10:26	160804S023				
16-08-0312-2	Matrix Spike Duplicate	Aqueous	GC/MS RR	08/04/16	08/05/16 11:00	160804S023				
Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Benzene	ND	50.00	47.54	95	44.85	90	74-122	6	0-21	
Carbon Tetrachloride	ND	50.00	47.19	94	46.54	93	60-144	1	0-21	
Chlorobenzene	ND	50.00	47.71	95	44.75	89	73-120	6	0-22	
1,2-Dibromoethane	ND	50.00	50.57	101	47.59	95	80-122	6	0-20	
1,2-Dichlorobenzene	ND	50.00	47.07	94	44.64	89	70-120	5	0-26	
1,2-Dichloroethane	ND	50.00	48.07	96	45.07	90	64-142	6	0-20	
1,1-Dichloroethene	ND	50.00	36.41	73	33.52	67	52-136	8	0-21	
Ethylbenzene	ND	50.00	45.89	92	43.21	86	77-125	6	0-24	
Toluene	ND	50.00	47.04	94	45.02	90	72-126	4	0-23	
Trichloroethene	ND	50.00	44.53	89	41.98	84	74-128	6	0-22	
Vinyl Chloride	ND	50.00	44.75	89	40.81	82	67-133	9	0-20	
p/m-Xylene	ND	100.0	91.80	92	86.73	87	63-129	6	0-25	
o-Xylene	ND	50.00	47.64	95	45.06	90	62-128	6	0-24	
Methyl-t-Butyl Ether (MTBE)	ND	50.00	44.52	89	41.46	83	68-134	7	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: 08/04/16
 Work Order: 16-08-0307
 Preparation: EPA 3510C
 Method: EPA 8270C (M) Isotope Dilution

Project: Raytheon Main / 532.30

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-216-793	LCS	Aqueous	GC/MS DDD	08/05/16	08/05/16 18:24	160805L12
<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	21.02	105	50-130	

Quality Control - LCS

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

Date Received: 08/04/16
 Work Order: 16-08-0307
 Preparation: EPA 5030C
 Method: EPA 8260B

Project: Raytheon Main / 532.30

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-14-001-21036	LCS	Aqueous	GC/MS RR	08/04/16	08/05/16 03:29	160804L048
Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Benzene	50.00	53.08	106	80-120	73-127	
Carbon Tetrachloride	50.00	54.32	109	67-139	55-151	
Chlorobenzene	50.00	53.47	107	78-120	71-127	
1,2-Dibromoethane	50.00	56.60	113	80-120	73-127	
1,2-Dichlorobenzene	50.00	53.84	108	63-129	52-140	
1,2-Dichloroethane	50.00	53.15	106	70-130	60-140	
1,1-Dichloroethene	50.00	39.58	79	66-126	56-136	
Ethylbenzene	50.00	51.50	103	80-123	73-130	
Toluene	50.00	53.43	107	80-120	73-127	
Trichloroethene	50.00	49.86	100	80-122	73-129	
Vinyl Chloride	50.00	48.50	97	70-130	60-140	
p/m-Xylene	100.0	103.9	104	75-123	67-131	
o-Xylene	50.00	53.64	107	74-122	66-130	
Methyl-t-Butyl Ether (MTBE)	50.00	50.63	101	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: 16-08-0307

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<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA 8260B	EPA 5030C	1023	GC/MS RR	2
EPA 8270C (M) Isotope Dilution	EPA 3510C	928	GC/MS DDD	1


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

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

Glossary of Terms and Qualifiers

Work Order: 16-08-0307

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 Chris Ross

QA Manager Steve Netto

Phone 858.455.6500

Fax 858.455.6533

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

Send Results to:

Steve Netto

9171 Towne Centre Drive

Suite 375

San Diego, CA 92122

Ph: 858.455.5400

snetto@hargis.com

SAMPLE RECEIPT CHECKLIST

COOLER / OF)

CLIENT: Hargis & Assoc., Inc.

DATE: 08/04/2016

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

Thermometer ID: SC2A (CF: 0.0°C); Temperature (w/o CF): 4.0 °C (w/ CF): 4.0 °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: 836

CUSTODY SEAL:

Cooler ☐ Present and Intact

☐ Present but Not Intact

☒ Not Present

☐ N/A

Checked by: 836

Sample(s) ☐ Present and Intact

☐ Present but Not Intact

☒ Not Present

☐ N/A

Checked by: 1017

SAMPLE CONDITION:

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

CONTAINER TYPE:

(Trip Blank Lot Number: N/A)

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

☐ 125PB_{znna} ☐ 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: 1017

s = H₂SO₄, u = ultra-pure, znna = Zn (CH₃CO₂)₂ + NaOH

Reviewed by: 836



August 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 : 1602700
Client Reference : Raytheon Fullerton, 532.30

Enclosed are the results for sample(s) received on August 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,

A handwritten signature in black ink, appearing to read "E Rodriguez", is written over a light blue horizontal line.

Eddie Rodriguez
Laboratory Director

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



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-080116	1602700-01	Lab Prepared Water	8/01/16 12:00	8/02/16 17:05
MW-21	1602700-02	Groundwater	8/01/16 12:30	8/02/16 17:05
EW-01	1602700-03	Groundwater	8/01/16 12:45	8/02/16 17:05
MW-32A	1602700-04	Groundwater	8/02/16 9:10	8/02/16 17:05
MW-32C	1602700-05	Groundwater	8/02/16 11:05	8/02/16 17:05
MW-32B-1SV	1602700-06	Groundwater	8/02/16 12:00	8/02/16 17:05
MW-32B	1602700-07	Groundwater	8/02/16 12:55	8/02/16 17:05
MW-33-1SV	1602700-08	Groundwater	8/02/16 13:47	8/02/16 17:05
MW-33	1602700-09	Groundwater	8/02/16 14:40	8/02/16 17:05
MW-35C	1602700-10	Groundwater	8/02/16 16:26	8/02/16 17:05
MW-15	1602700-11	Groundwater	8/01/16 13:38	8/02/16 17:05
MW-08	1602700-12	Groundwater	8/01/16 14:40	8/02/16 17:05
MW-18	1602700-13	Groundwater	8/02/16 9:22	8/02/16 17:05
MW-16	1602700-14	Groundwater	8/02/16 10:41	8/02/16 17:05
RB-080216	1602700-15	Groundwater	8/02/16 11:10	8/02/16 17:05
MW-1600	1602700-16	Groundwater	8/02/16 12:41	8/02/16 17:05
MW-20	1602700-17	Groundwater	8/02/16 14:49	8/02/16 17:05
MW-26C	1602700-18	Groundwater	8/02/16 16:28	8/02/16 17:05



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID TB-080116

Lab ID: 1602700-01

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	B6H0135	08/04/2016	08/04/16 17:13	
1,1,1-Trichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,1,2-Trichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,1-Dichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,1-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,1-Dichloropropene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,2,3-Trichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,2-Dibromoethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,2-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,2-Dichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,2-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,3-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,3-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
1,4-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
2,2-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
2-Chlorotoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
4-Chlorotoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
4-Isopropyltoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Benzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Bromobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Bromodichloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Bromoform	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Bromomethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Carbon tetrachloride	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Chlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Chloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Chloroform	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Chloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Dibromochloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID TB-080116

Lab ID: 1602700-01

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	B6H0135	08/04/2016	08/04/16 17:13	
Dichlorodifluoromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Ethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Hexachlorobutadiene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Isopropylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
m,p-Xylene	ND	1.0	1	B6H0135	08/04/2016	08/04/16 17:13	
Methylene chloride	ND	1.0	1	B6H0135	08/04/2016	08/04/16 17:13	
n-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
n-Propylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Naphthalene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
o-Xylene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
sec-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Styrene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
tert-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Tetrachloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Toluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Trichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Trichlorofluoromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Vinyl chloride	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:13	
Surrogate: 1,2-Dichloroethane-d4	138 %	51 - 157		B6H0135	08/04/2016	08/04/16 17:13	
Surrogate: 4-Bromofluorobenzene	99.4 %	61 - 123		B6H0135	08/04/2016	08/04/16 17:13	
Surrogate: Dibromofluoromethane	141 %	57 - 147		B6H0135	08/04/2016	08/04/16 17:13	
Surrogate: Toluene-d8	103 %	61 - 119		B6H0135	08/04/2016	08/04/16 17:13	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-21

Lab ID: 1602700-02

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,1,1-Trichloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,1,2,2-Tetrachloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,1,2-Trichloroethane	11	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,1-Dichloroethane	27	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,1-Dichloroethene	1500	10	20	B6H0182	08/05/2016	08/05/16 19:24	
1,1-Dichloropropene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,2,3-Trichloropropane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,2,3-Trichlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,2,4-Trichlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,2,4-Trimethylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,2-Dibromo-3-chloropropane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,2-Dibromoethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,2-Dichlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,2-Dichloroethane	4.2	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,2-Dichloropropane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,3,5-Trimethylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,3-Dichlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,3-Dichloropropane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
1,4-Dichlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
2,2-Dichloropropane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
2-Chlorotoluene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
4-Chlorotoluene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
4-Isopropyltoluene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Benzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Bromobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Bromodichloromethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Bromoform	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Bromomethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Carbon tetrachloride	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Chlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Chloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Chloroform	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Chloromethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
cis-1,2-Dichloroethene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
cis-1,3-Dichloropropene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Dibromochloromethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-21

Lab ID: 1602700-02

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Dichlorodifluoromethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Ethylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Hexachlorobutadiene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Isopropylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
m,p-Xylene	ND	5.0	5	B6H0182	08/05/2016	08/05/16 19:01	
Methylene chloride	ND	5.0	5	B6H0182	08/05/2016	08/05/16 19:01	
n-Butylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
n-Propylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Naphthalene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
o-Xylene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
sec-Butylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Styrene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
tert-Butylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Tetrachloroethene	4.5	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Toluene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
trans-1,2-Dichloroethene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Trichloroethene	20	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Trichlorofluoromethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
Vinyl chloride	ND	2.5	5	B6H0182	08/05/2016	08/05/16 19:01	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>	<i>51 - 157</i>		B6H0182	08/05/2016	<i>08/05/16 19:24</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>96.4 %</i>	<i>51 - 157</i>		B6H0182	08/05/2016	<i>08/05/16 19:01</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.8 %</i>	<i>61 - 123</i>		B6H0182	08/05/2016	<i>08/05/16 19:24</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.9 %</i>	<i>61 - 123</i>		B6H0182	08/05/2016	<i>08/05/16 19:01</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>98.2 %</i>	<i>57 - 147</i>		B6H0182	08/05/2016	<i>08/05/16 19:01</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>	<i>57 - 147</i>		B6H0182	08/05/2016	<i>08/05/16 19:24</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6H0182	08/05/2016	<i>08/05/16 19:01</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>61 - 119</i>		B6H0182	08/05/2016	<i>08/05/16 19:24</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-21

Lab ID: 1602700-02

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	250	2.0	1	B6H0172	08/05/2016	08/08/16 12:09	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>54.2 %</i>	<i>42 - 106</i>		B6H0172	08/05/2016	<i>08/08/16 12:09</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>66.6 %</i>	<i>55 - 117</i>		B6H0172	08/05/2016	<i>08/08/16 12:09</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>81.6 %</i>	<i>52 - 142</i>		B6H0172	08/05/2016	<i>08/08/16 12:09</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>71.8 %</i>	<i>43 - 116</i>		B6H0172	08/05/2016	<i>08/08/16 12:09</i>	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID EW-01

Lab ID: 1602700-03

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	B6H0135	08/04/2016	08/04/16 20:02	
1,1,1-Trichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,1,2-Trichloroethane	1.7	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,1-Dichloroethane	5.6	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,1-Dichloroethene	430	5.0	10	B6H0135	08/04/2016	08/04/16 20:26	
1,1-Dichloropropene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,2,3-Trichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,2-Dibromoethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,2-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,2-Dichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,2-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,3-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,3-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
1,4-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
2,2-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
2-Chlorotoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
4-Chlorotoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
4-Isopropyltoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Benzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Bromobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Bromodichloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Bromoform	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Bromomethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Carbon tetrachloride	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Chlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Chloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Chloroform	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Chloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Dibromochloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID EW-01

Lab ID: 1602700-03

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	B6H0135	08/04/2016	08/04/16 20:02	
Dichlorodifluoromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Ethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Hexachlorobutadiene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Isopropylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
m,p-Xylene	ND	1.0	1	B6H0135	08/04/2016	08/04/16 20:02	
Methylene chloride	ND	1.0	1	B6H0135	08/04/2016	08/04/16 20:02	
n-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
n-Propylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Naphthalene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
o-Xylene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
sec-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Styrene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
tert-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Tetrachloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Toluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Trichloroethene	0.76	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Trichlorofluoromethane	0.60	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
Vinyl chloride	ND	0.50	1	B6H0135	08/04/2016	08/04/16 20:02	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>151 %</i>	<i>51 - 157</i>		B6H0135	08/04/2016	<i>08/04/16 20:26</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>151 %</i>	<i>51 - 157</i>		B6H0135	08/04/2016	<i>08/04/16 20:02</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>100 %</i>	<i>61 - 123</i>		B6H0135	08/04/2016	<i>08/04/16 20:26</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.6 %</i>	<i>61 - 123</i>		B6H0135	08/04/2016	<i>08/04/16 20:02</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>141 %</i>	<i>57 - 147</i>		B6H0135	08/04/2016	<i>08/04/16 20:02</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>147 %</i>	<i>57 - 147</i>		B6H0135	08/04/2016	<i>08/04/16 20:26</i>	
<i>Surrogate: Toluene-d8</i>	<i>105 %</i>	<i>61 - 119</i>		B6H0135	08/04/2016	<i>08/04/16 20:26</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>61 - 119</i>		B6H0135	08/04/2016	<i>08/04/16 20:02</i>	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID EW-01

Lab ID: 1602700-03

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	90	2.0	1	B6H0172	08/05/2016	08/08/16 12:36	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>59.8 %</i>	<i>42 - 106</i>		B6H0172	08/05/2016	<i>08/08/16 12:36</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>68.9 %</i>	<i>55 - 117</i>		B6H0172	08/05/2016	<i>08/08/16 12:36</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>84.9 %</i>	<i>52 - 142</i>		B6H0172	08/05/2016	<i>08/08/16 12:36</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>77.3 %</i>	<i>43 - 116</i>		B6H0172	08/05/2016	<i>08/08/16 12:36</i>	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-32A

Lab ID: 1602700-04

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	B6H0097	08/03/2016	08/03/16 16:34	
1,1,1-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,1,2-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,1-Dichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,1-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,1-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,2,3-Trichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,2-Dibromoethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,2-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,2-Dichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,3-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,3-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
1,4-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
2,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
2-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
4-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
4-Isopropyltoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Benzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Bromobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Bromodichloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Bromoform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Bromomethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Carbon tetrachloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Chlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Chloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Chloroform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Chloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Dibromochloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-32A

Lab ID: 1602700-04

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	B6H0097	08/03/2016	08/03/16 16:34	
Dichlorodifluoromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Ethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Hexachlorobutadiene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Isopropylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
m,p-Xylene	ND	1.0	1	B6H0097	08/03/2016	08/03/16 16:34	
Methylene chloride	ND	1.0	1	B6H0097	08/03/2016	08/03/16 16:34	
n-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
n-Propylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Naphthalene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
o-Xylene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
sec-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Styrene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
tert-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Tetrachloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Toluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Trichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Trichlorofluoromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Vinyl chloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:34	
Surrogate: 1,2-Dichloroethane-d4	146 %	51 - 157		B6H0097	08/03/2016	08/03/16 16:34	
Surrogate: 4-Bromofluorobenzene	99.6 %	61 - 123		B6H0097	08/03/2016	08/03/16 16:34	
Surrogate: Dibromofluoromethane	143 %	57 - 147		B6H0097	08/03/2016	08/03/16 16:34	
Surrogate: Toluene-d8	101 %	61 - 119		B6H0097	08/03/2016	08/03/16 16:34	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-32A

Lab ID: 1602700-04

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	B6H0136	08/04/2016	08/04/16 14:56	
Surrogate: 1,2-Dichlorobenzene-d4	59.9 %	31 - 106		B6H0136	08/04/2016	08/04/16 14:56	
Surrogate: 2-Fluorobiphenyl	59.8 %	28 - 122		B6H0136	08/04/2016	08/04/16 14:56	
Surrogate: 4-Terphenyl-d14	80.8 %	43 - 131		B6H0136	08/04/2016	08/04/16 14:56	
Surrogate: Nitrobenzene-d5	72.0 %	20 - 119		B6H0136	08/04/2016	08/04/16 14:56	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-32C

Lab ID: 1602700-05

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	B6H0135	08/04/2016	08/04/16 18:50	
1,1,1-Trichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,1,2-Trichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,1-Dichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,1-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,1-Dichloropropene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,2,3-Trichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,2-Dibromoethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,2-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,2-Dichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,2-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,3-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,3-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
1,4-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
2,2-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
2-Chlorotoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
4-Chlorotoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
4-Isopropyltoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Benzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Bromobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Bromodichloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Bromoform	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Bromomethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Carbon tetrachloride	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Chlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Chloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Chloroform	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Chloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Dibromochloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-32C

Lab ID: 1602700-05

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	B6H0135	08/04/2016	08/04/16 18:50	
Dichlorodifluoromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Ethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Hexachlorobutadiene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Isopropylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
m,p-Xylene	ND	1.0	1	B6H0135	08/04/2016	08/04/16 18:50	
Methylene chloride	ND	1.0	1	B6H0135	08/04/2016	08/04/16 18:50	
n-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
n-Propylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Naphthalene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
o-Xylene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
sec-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Styrene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
tert-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Tetrachloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Toluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Trichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Trichlorofluoromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Vinyl chloride	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:50	
Surrogate: 1,2-Dichloroethane-d4	152 %	51 - 157		B6H0135	08/04/2016	08/04/16 18:50	
Surrogate: 4-Bromofluorobenzene	100 %	61 - 123		B6H0135	08/04/2016	08/04/16 18:50	
Surrogate: Dibromofluoromethane	144 %	57 - 147		B6H0135	08/04/2016	08/04/16 18:50	
Surrogate: Toluene-d8	104 %	61 - 119		B6H0135	08/04/2016	08/04/16 18:50	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-32C

Lab ID: 1602700-05

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	ND	0.20	1	B6H0136	08/04/2016	08/04/16 15:25	
Surrogate: 1,2-Dichlorobenzene-d4	73.6 %	31 - 106		B6H0136	08/04/2016	08/04/16 15:25	
Surrogate: 2-Fluorobiphenyl	57.4 %	28 - 122		B6H0136	08/04/2016	08/04/16 15:25	
Surrogate: 4-Terphenyl-d14	76.1 %	43 - 131		B6H0136	08/04/2016	08/04/16 15:25	
Surrogate: Nitrobenzene-d5	46.5 %	20 - 119		B6H0136	08/04/2016	08/04/16 15:25	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-32B-1SV

Lab ID: 1602700-06

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,1,1-Trichloroethane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,1,2-Trichloroethane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,1-Dichloroethane	1.4	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,1-Dichloroethene	150	5.0	10	B6H0182	08/05/2016	08/05/16 17:06	
1,1-Dichloropropene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,2,3-Trichloropropane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,2-Dibromoethane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,2-Dichlorobenzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,2-Dichloroethane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,2-Dichloropropane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,3-Dichlorobenzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,3-Dichloropropane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
1,4-Dichlorobenzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
2,2-Dichloropropane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
2-Chlorotoluene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
4-Chlorotoluene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
4-Isopropyltoluene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Benzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Bromobenzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Bromodichloromethane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Bromoform	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Bromomethane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Carbon tetrachloride	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Chlorobenzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Chloroethane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Chloroform	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Chloromethane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
cis-1,2-Dichloroethene	5.6	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Dibromochloromethane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-32B-1SV

Lab ID: 1602700-06

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Dichlorodifluoromethane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Ethylbenzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Hexachlorobutadiene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Isopropylbenzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
m,p-Xylene	ND	1.0	1	B6H0182	08/05/2016	08/05/16 16:43	
Methylene chloride	ND	1.0	1	B6H0182	08/05/2016	08/05/16 16:43	
n-Butylbenzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
n-Propylbenzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Naphthalene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
o-Xylene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
sec-Butylbenzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Styrene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
tert-Butylbenzene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Tetrachloroethene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Toluene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Trichloroethene	55	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Trichlorofluoromethane	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
Vinyl chloride	ND	0.50	1	B6H0182	08/05/2016	08/05/16 16:43	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97.1 %</i>	<i>51 - 157</i>		B6H0182	08/05/2016	<i>08/05/16 17:06</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>96.2 %</i>	<i>51 - 157</i>		B6H0182	08/05/2016	<i>08/05/16 16:43</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.5 %</i>	<i>61 - 123</i>		B6H0182	08/05/2016	<i>08/05/16 17:06</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.4 %</i>	<i>61 - 123</i>		B6H0182	08/05/2016	<i>08/05/16 16:43</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>96.5 %</i>	<i>57 - 147</i>		B6H0182	08/05/2016	<i>08/05/16 16:43</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>98.4 %</i>	<i>57 - 147</i>		B6H0182	08/05/2016	<i>08/05/16 17:06</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6H0182	08/05/2016	<i>08/05/16 17:06</i>	
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>	<i>61 - 119</i>		B6H0182	08/05/2016	<i>08/05/16 16:43</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-32B-1SV

Lab ID: 1602700-06

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	2.9	0.20	1	B6H0136	08/04/2016	08/04/16 15:53	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>61.4 %</i>	<i>31 - 106</i>		B6H0136	08/04/2016	<i>08/04/16 15:53</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>48.4 %</i>	<i>28 - 122</i>		B6H0136	08/04/2016	<i>08/04/16 15:53</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>84.1 %</i>	<i>43 - 131</i>		B6H0136	08/04/2016	<i>08/04/16 15:53</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>77.9 %</i>	<i>20 - 119</i>		B6H0136	08/04/2016	<i>08/04/16 15:53</i>	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-32B

Lab ID: 1602700-07

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	B6H0097	08/03/2016	08/03/16 19:47	
1,1,1-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,1,2-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,1-Dichloroethane	1.4	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,1-Dichloroethene	180	5.0	10	B6H0097	08/03/2016	08/03/16 20:12	
1,1-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,2,3-Trichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,2-Dibromoethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,2-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,2-Dichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,3-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,3-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
1,4-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
2,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
2-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
4-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
4-Isopropyltoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Benzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Bromobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Bromodichloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Bromoform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Bromomethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Carbon tetrachloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Chlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Chloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Chloroform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Chloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
cis-1,2-Dichloroethene	5.9	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Dibromochloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-32B

Lab ID: 1602700-07

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	B6H0097	08/03/2016	08/03/16 19:47	
Dichlorodifluoromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Ethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Hexachlorobutadiene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Isopropylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
m,p-Xylene	ND	1.0	1	B6H0097	08/03/2016	08/03/16 19:47	
Methylene chloride	ND	1.0	1	B6H0097	08/03/2016	08/03/16 19:47	
n-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
n-Propylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Naphthalene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
o-Xylene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
sec-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Styrene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
tert-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Tetrachloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Toluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Trichloroethene	44	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Trichlorofluoromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
Vinyl chloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:47	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>153 %</i>	<i>51 - 157</i>		B6H0097	08/03/2016	<i>08/03/16 19:47</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>150 %</i>	<i>51 - 157</i>		B6H0097	08/03/2016	<i>08/03/16 20:12</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.2 %</i>	<i>61 - 123</i>		B6H0097	08/03/2016	<i>08/03/16 19:47</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>100 %</i>	<i>61 - 123</i>		B6H0097	08/03/2016	<i>08/03/16 20:12</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>144 %</i>	<i>57 - 147</i>		B6H0097	08/03/2016	<i>08/03/16 20:12</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>144 %</i>	<i>57 - 147</i>		B6H0097	08/03/2016	<i>08/03/16 19:47</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6H0097	08/03/2016	<i>08/03/16 20:12</i>	
<i>Surrogate: Toluene-d8</i>	<i>94.3 %</i>	<i>61 - 119</i>		B6H0097	08/03/2016	<i>08/03/16 19:47</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-32B

Lab ID: 1602700-07

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	2.6	0.20	1	B6H0136	08/04/2016	08/04/16 16:21	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>67.4 %</i>	<i>31 - 106</i>		B6H0136	08/04/2016	<i>08/04/16 16:21</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>56.1 %</i>	<i>28 - 122</i>		B6H0136	08/04/2016	<i>08/04/16 16:21</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>83.1 %</i>	<i>43 - 131</i>		B6H0136	08/04/2016	<i>08/04/16 16:21</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>71.5 %</i>	<i>20 - 119</i>		B6H0136	08/04/2016	<i>08/04/16 16:21</i>	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-33-1SV

Lab ID: 1602700-08

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	B6H0097	08/03/2016	08/03/16 18:11	
1,1,1-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,1,2-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,1-Dichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,1-Dichloroethene	8.8	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,1-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,2,3-Trichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,2-Dibromoethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,2-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,2-Dichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,3-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,3-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
1,4-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
2,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
2-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
4-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
4-Isopropyltoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Benzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Bromobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Bromodichloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Bromoform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Bromomethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Carbon tetrachloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Chlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Chloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Chloroform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Chloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Dibromochloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-33-1SV

Lab ID: 1602700-08

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	B6H0097	08/03/2016	08/03/16 18:11	
Dichlorodifluoromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Ethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Hexachlorobutadiene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Isopropylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
m,p-Xylene	ND	1.0	1	B6H0097	08/03/2016	08/03/16 18:11	
Methylene chloride	ND	1.0	1	B6H0097	08/03/2016	08/03/16 18:11	
n-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
n-Propylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Naphthalene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
o-Xylene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
sec-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Styrene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
tert-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Tetrachloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Toluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Trichloroethene	1.1	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Trichlorofluoromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
Vinyl chloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:11	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>151 %</i>	<i>51 - 157</i>		B6H0097	08/03/2016	<i>08/03/16 18:11</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>100 %</i>	<i>61 - 123</i>		B6H0097	08/03/2016	<i>08/03/16 18:11</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>145 %</i>	<i>57 - 147</i>		B6H0097	08/03/2016	<i>08/03/16 18:11</i>	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>61 - 119</i>		B6H0097	08/03/2016	<i>08/03/16 18:11</i>	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-33-1SV

Lab ID: 1602700-08

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	B6H0136	08/04/2016	08/04/16 16:50	
Surrogate: 1,2-Dichlorobenzene-d4	72.7 %	31 - 106		B6H0136	08/04/2016	08/04/16 16:50	
Surrogate: 2-Fluorobiphenyl	53.3 %	28 - 122		B6H0136	08/04/2016	08/04/16 16:50	
Surrogate: 4-Terphenyl-d14	74.6 %	43 - 131		B6H0136	08/04/2016	08/04/16 16:50	
Surrogate: Nitrobenzene-d5	86.0 %	20 - 119		B6H0136	08/04/2016	08/04/16 16:50	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-33

Lab ID: 1602700-09

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	B6H0097	08/03/2016	08/03/16 18:35	
1,1,1-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,1,2-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,1-Dichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,1-Dichloroethene	6.8	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,1-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,2,3-Trichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,2-Dibromoethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,2-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,2-Dichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,3-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,3-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
1,4-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
2,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
2-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
4-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
4-Isopropyltoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Benzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Bromobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Bromodichloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Bromoform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Bromomethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Carbon tetrachloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Chlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Chloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Chloroform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Chloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Dibromochloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-33

Lab ID: 1602700-09

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	B6H0097	08/03/2016	08/03/16 18:35	
Dichlorodifluoromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Ethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Hexachlorobutadiene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Isopropylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
m,p-Xylene	ND	1.0	1	B6H0097	08/03/2016	08/03/16 18:35	
Methylene chloride	ND	1.0	1	B6H0097	08/03/2016	08/03/16 18:35	
n-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
n-Propylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Naphthalene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
o-Xylene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
sec-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Styrene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
tert-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Tetrachloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Toluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Trichloroethene	0.78	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Trichlorofluoromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
Vinyl chloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 18:35	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>151 %</i>	<i>51 - 157</i>		B6H0097	08/03/2016	<i>08/03/16 18:35</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>100 %</i>	<i>61 - 123</i>		B6H0097	08/03/2016	<i>08/03/16 18:35</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>148 %</i>	<i>57 - 147</i>		B6H0097	08/03/2016	<i>08/03/16 18:35</i>	S5
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>61 - 119</i>		B6H0097	08/03/2016	<i>08/03/16 18:35</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-33

Lab ID: 1602700-09

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	B6H0136	08/04/2016	08/05/16 11:06	
Surrogate: 1,2-Dichlorobenzene-d4	59.8 %	31 - 106		B6H0136	08/04/2016	08/05/16 11:06	
Surrogate: 2-Fluorobiphenyl	63.8 %	28 - 122		B6H0136	08/04/2016	08/05/16 11:06	
Surrogate: 4-Terphenyl-d14	90.0 %	43 - 131		B6H0136	08/04/2016	08/05/16 11:06	
Surrogate: Nitrobenzene-d5	88.5 %	20 - 119		B6H0136	08/04/2016	08/05/16 11:06	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-35C

Lab ID: 1602700-10

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	B6H0097	08/03/2016	08/03/16 16:58	
1,1,1-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,1,2-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,1-Dichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,1-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,1-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,2,3-Trichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,2-Dibromoethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,2-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,2-Dichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,3-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,3-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
1,4-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
2,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
2-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
4-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
4-Isopropyltoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Benzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Bromobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Bromodichloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Bromoform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Bromomethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Carbon tetrachloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Chlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Chloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Chloroform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Chloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Dibromochloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-35C

Lab ID: 1602700-10

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	B6H0097	08/03/2016	08/03/16 16:58	
Dichlorodifluoromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Ethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Hexachlorobutadiene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Isopropylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
m,p-Xylene	ND	1.0	1	B6H0097	08/03/2016	08/03/16 16:58	
Methylene chloride	ND	1.0	1	B6H0097	08/03/2016	08/03/16 16:58	
n-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
n-Propylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Naphthalene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
o-Xylene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
sec-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Styrene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
tert-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Tetrachloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Toluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Trichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Trichlorofluoromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Vinyl chloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 16:58	
Surrogate: 1,2-Dichloroethane-d4	149 %	51 - 157		B6H0097	08/03/2016	08/03/16 16:58	
Surrogate: 4-Bromofluorobenzene	102 %	61 - 123		B6H0097	08/03/2016	08/03/16 16:58	
Surrogate: Dibromofluoromethane	147 %	57 - 147		B6H0097	08/03/2016	08/03/16 16:58	
Surrogate: Toluene-d8	103 %	61 - 119		B6H0097	08/03/2016	08/03/16 16:58	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-35C

Lab ID: 1602700-10

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	B6H0136	08/04/2016	08/05/16 11:33	
Surrogate: 1,2-Dichlorobenzene-d4	72.9 %	31 - 106		B6H0136	08/04/2016	08/05/16 11:33	
Surrogate: 2-Fluorobiphenyl	52.2 %	28 - 122		B6H0136	08/04/2016	08/05/16 11:33	
Surrogate: 4-Terphenyl-d14	81.4 %	43 - 131		B6H0136	08/04/2016	08/05/16 11:33	
Surrogate: Nitrobenzene-d5	88.7 %	20 - 119		B6H0136	08/04/2016	08/05/16 11:33	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-15

Lab ID: 1602700-11

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	B6H0097	08/03/2016	08/03/16 17:22	
1,1,1-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,1,2-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,1-Dichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,1-Dichloroethene	3.8	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,1-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,2,3-Trichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,2-Dibromoethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,2-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,2-Dichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,3-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,3-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
1,4-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
2,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
2-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
4-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
4-Isopropyltoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Benzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Bromobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Bromodichloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Bromoform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Bromomethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Carbon tetrachloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Chlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Chloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Chloroform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Chloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Dibromochloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-15

Lab ID: 1602700-11

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	B6H0097	08/03/2016	08/03/16 17:22	
Dichlorodifluoromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Ethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Hexachlorobutadiene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Isopropylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
m,p-Xylene	ND	1.0	1	B6H0097	08/03/2016	08/03/16 17:22	
Methylene chloride	ND	1.0	1	B6H0097	08/03/2016	08/03/16 17:22	
n-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
n-Propylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Naphthalene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
o-Xylene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
sec-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Styrene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
tert-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Tetrachloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Toluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Trichloroethene	1.4	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Trichlorofluoromethane	6.6	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
Vinyl chloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 17:22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>153 %</i>	<i>51 - 157</i>		B6H0097	08/03/2016	<i>08/03/16 17:22</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>101 %</i>	<i>61 - 123</i>		B6H0097	08/03/2016	<i>08/03/16 17:22</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>133 %</i>	<i>57 - 147</i>		B6H0097	08/03/2016	<i>08/03/16 17:22</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6H0097	08/03/2016	<i>08/03/16 17:22</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-08

Lab ID: 1602700-12

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	B6H0097	08/03/2016	08/03/16 20:36	
1,1,1-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,1,2-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,1-Dichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,1-Dichloroethene	8.0	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,1-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,2,3-Trichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,2-Dibromoethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,2-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,2-Dichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,3-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,3-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
1,4-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
2,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
2-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
4-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
4-Isopropyltoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Benzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Bromobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Bromodichloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Bromoform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Bromomethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Carbon tetrachloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Chlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Chloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Chloroform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Chloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
cis-1,2-Dichloroethene	2.8	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Dibromochloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-08

Lab ID: 1602700-12

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	B6H0097	08/03/2016	08/03/16 20:36	
Dichlorodifluoromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Ethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Hexachlorobutadiene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Isopropylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
m,p-Xylene	ND	1.0	1	B6H0097	08/03/2016	08/03/16 20:36	
Methylene chloride	ND	1.0	1	B6H0097	08/03/2016	08/03/16 20:36	
n-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
n-Propylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Naphthalene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
o-Xylene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
sec-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Styrene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
tert-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Tetrachloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Toluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Trichloroethene	38	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Trichlorofluoromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
Vinyl chloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 20:36	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>153 %</i>	<i>51 - 157</i>		B6H0097	08/03/2016	<i>08/03/16 20:36</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.2 %</i>	<i>61 - 123</i>		B6H0097	08/03/2016	<i>08/03/16 20:36</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>141 %</i>	<i>57 - 147</i>		B6H0097	08/03/2016	<i>08/03/16 20:36</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.3 %</i>	<i>61 - 119</i>		B6H0097	08/03/2016	<i>08/03/16 20:36</i>	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-08

Lab ID: 1602700-12

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	ND	0.20	1	B6H0136	08/04/2016	08/05/16 12:01	
Surrogate: 1,2-Dichlorobenzene-d4	85.3 %	31 - 106		B6H0136	08/04/2016	08/05/16 12:01	
Surrogate: 2-Fluorobiphenyl	65.9 %	28 - 122		B6H0136	08/04/2016	08/05/16 12:01	
Surrogate: 4-Terphenyl-d14	82.8 %	43 - 131		B6H0136	08/04/2016	08/05/16 12:01	
Surrogate: Nitrobenzene-d5	105 %	20 - 119		B6H0136	08/04/2016	08/05/16 12:01	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-18

Lab ID: 1602700-13

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	B6H0097	08/03/2016	08/03/16 19:23	
1,1,1-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,1,2-Trichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,1-Dichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,1-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,1-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,2,3-Trichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,2-Dibromoethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,2-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,2-Dichloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,3-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,3-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
1,4-Dichlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
2,2-Dichloropropane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
2-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
4-Chlorotoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
4-Isopropyltoluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Benzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Bromobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Bromodichloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Bromoform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Bromomethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Carbon tetrachloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Chlorobenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Chloroethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Chloroform	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Chloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Dibromochloromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-18

Lab ID: 1602700-13

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	B6H0097	08/03/2016	08/03/16 19:23	
Dichlorodifluoromethane	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Ethylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Hexachlorobutadiene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Isopropylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
m,p-Xylene	ND	1.0	1	B6H0097	08/03/2016	08/03/16 19:23	
Methylene chloride	ND	1.0	1	B6H0097	08/03/2016	08/03/16 19:23	
n-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
n-Propylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Naphthalene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
o-Xylene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
sec-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Styrene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
tert-Butylbenzene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Tetrachloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Toluene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Trichloroethene	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Trichlorofluoromethane	3.8	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
Vinyl chloride	ND	0.50	1	B6H0097	08/03/2016	08/03/16 19:23	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>152 %</i>	<i>51 - 157</i>		B6H0097	08/03/2016	<i>08/03/16 19:23</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.9 %</i>	<i>61 - 123</i>		B6H0097	08/03/2016	<i>08/03/16 19:23</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>146 %</i>	<i>57 - 147</i>		B6H0097	08/03/2016	<i>08/03/16 19:23</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6H0097	08/03/2016	<i>08/03/16 19:23</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-18

Lab ID: 1602700-13

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	ND	0.20	1	B6H0136	08/04/2016	08/05/16 12:29	
Surrogate: 1,2-Dichlorobenzene-d4	73.0 %	31 - 106		B6H0136	08/04/2016	08/05/16 12:29	
Surrogate: 2-Fluorobiphenyl	51.3 %	28 - 122		B6H0136	08/04/2016	08/05/16 12:29	
Surrogate: 4-Terphenyl-d14	75.4 %	43 - 131		B6H0136	08/04/2016	08/05/16 12:29	
Surrogate: Nitrobenzene-d5	98.6 %	20 - 119		B6H0136	08/04/2016	08/05/16 12:29	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-16

Lab ID: 1602700-14

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,1,1-Trichloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,1,2,2-Tetrachloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,1,2-Trichloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,1-Dichloroethane	6.2	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,1-Dichloroethene	1000	10	20	B6H0182	08/05/2016	08/05/16 18:38	
1,1-Dichloropropene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,2,3-Trichloropropane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,2,3-Trichlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,2,4-Trichlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,2,4-Trimethylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,2-Dibromo-3-chloropropane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,2-Dibromoethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,2-Dichlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,2-Dichloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,2-Dichloropropane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,3,5-Trimethylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,3-Dichlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,3-Dichloropropane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
1,4-Dichlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
2,2-Dichloropropane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
2-Chlorotoluene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
4-Chlorotoluene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
4-Isopropyltoluene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Benzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Bromobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Bromodichloromethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Bromoform	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Bromomethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Carbon tetrachloride	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Chlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Chloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Chloroform	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Chloromethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
cis-1,2-Dichloroethene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
cis-1,3-Dichloropropene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Dibromochloromethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-16

Lab ID: 1602700-14

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Dichlorodifluoromethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Ethylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Hexachlorobutadiene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Isopropylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
m,p-Xylene	ND	5.0	5	B6H0182	08/05/2016	08/05/16 18:15	
Methylene chloride	ND	5.0	5	B6H0182	08/05/2016	08/05/16 18:15	
n-Butylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
n-Propylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Naphthalene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
o-Xylene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
sec-Butylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Styrene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
tert-Butylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Tetrachloroethene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Toluene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
trans-1,2-Dichloroethene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Trichloroethene	6.2	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Trichlorofluoromethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
Vinyl chloride	ND	2.5	5	B6H0182	08/05/2016	08/05/16 18:15	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.6 %</i>	<i>51 - 157</i>		B6H0182	08/05/2016	<i>08/05/16 18:15</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.0 %</i>	<i>51 - 157</i>		B6H0182	08/05/2016	<i>08/05/16 18:38</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.6 %</i>	<i>61 - 123</i>		B6H0182	08/05/2016	<i>08/05/16 18:15</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.9 %</i>	<i>61 - 123</i>		B6H0182	08/05/2016	<i>08/05/16 18:38</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>97.2 %</i>	<i>57 - 147</i>		B6H0182	08/05/2016	<i>08/05/16 18:38</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>98.2 %</i>	<i>57 - 147</i>		B6H0182	08/05/2016	<i>08/05/16 18:15</i>	
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>	<i>61 - 119</i>		B6H0182	08/05/2016	<i>08/05/16 18:38</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6H0182	08/05/2016	<i>08/05/16 18:15</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-16

Lab ID: 1602700-14

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	B6H0172	08/05/2016	08/08/16 13:04	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>59.7 %</i>	<i>42 - 106</i>		<i>B6H0172</i>	<i>08/05/2016</i>	<i>08/08/16 13:04</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>70.6 %</i>	<i>55 - 117</i>		<i>B6H0172</i>	<i>08/05/2016</i>	<i>08/08/16 13:04</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>87.3 %</i>	<i>52 - 142</i>		<i>B6H0172</i>	<i>08/05/2016</i>	<i>08/08/16 13:04</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>76.7 %</i>	<i>43 - 116</i>		<i>B6H0172</i>	<i>08/05/2016</i>	<i>08/08/16 13:04</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID RB-080216

Lab ID: 1602700-15

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	B6H0135	08/04/2016	08/04/16 17:37	
1,1,1-Trichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,1,2-Trichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,1-Dichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,1-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,1-Dichloropropene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,2,3-Trichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,2-Dibromoethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,2-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,2-Dichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,2-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,3-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,3-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
1,4-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
2,2-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
2-Chlorotoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
4-Chlorotoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
4-Isopropyltoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Benzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Bromobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Bromodichloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Bromoform	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Bromomethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Carbon tetrachloride	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Chlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Chloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Chloroform	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Chloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Dibromochloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID RB-080216

Lab ID: 1602700-15

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	B6H0135	08/04/2016	08/04/16 17:37	
Dichlorodifluoromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Ethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Hexachlorobutadiene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Isopropylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
m,p-Xylene	ND	1.0	1	B6H0135	08/04/2016	08/04/16 17:37	
Methylene chloride	ND	1.0	1	B6H0135	08/04/2016	08/04/16 17:37	
n-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
n-Propylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Naphthalene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
o-Xylene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
sec-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Styrene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
tert-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Tetrachloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Toluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Trichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Trichlorofluoromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Vinyl chloride	ND	0.50	1	B6H0135	08/04/2016	08/04/16 17:37	
Surrogate: 1,2-Dichloroethane-d4	145 %	51 - 157		B6H0135	08/04/2016	08/04/16 17:37	
Surrogate: 4-Bromofluorobenzene	100 %	61 - 123		B6H0135	08/04/2016	08/04/16 17:37	
Surrogate: Dibromofluoromethane	141 %	57 - 147		B6H0135	08/04/2016	08/04/16 17:37	
Surrogate: Toluene-d8	104 %	61 - 119		B6H0135	08/04/2016	08/04/16 17:37	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID RB-080216

Lab ID: 1602700-15

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	B6H0136	08/04/2016	08/05/16 12:57	
Surrogate: 1,2-Dichlorobenzene-d4	82.1 %	31 - 106		B6H0136	08/04/2016	08/05/16 12:57	
Surrogate: 2-Fluorobiphenyl	61.2 %	28 - 122		B6H0136	08/04/2016	08/05/16 12:57	
Surrogate: 4-Terphenyl-d14	82.4 %	43 - 131		B6H0136	08/04/2016	08/05/16 12:57	
Surrogate: Nitrobenzene-d5	108 %	20 - 119		B6H0136	08/04/2016	08/05/16 12:57	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-1600

Lab ID: 1602700-16

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,1,1-Trichloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,1,2,2-Tetrachloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,1,2-Trichloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,1-Dichloroethane	5.3	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,1-Dichloroethene	1000	10	20	B6H0182	08/05/2016	08/05/16 17:52	
1,1-Dichloropropene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,2,3-Trichloropropane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,2,3-Trichlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,2,4-Trichlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,2,4-Trimethylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,2-Dibromo-3-chloropropane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,2-Dibromoethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,2-Dichlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,2-Dichloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,2-Dichloropropane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,3,5-Trimethylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,3-Dichlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,3-Dichloropropane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
1,4-Dichlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
2,2-Dichloropropane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
2-Chlorotoluene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
4-Chlorotoluene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
4-Isopropyltoluene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Benzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Bromobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Bromodichloromethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Bromoform	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Bromomethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Carbon tetrachloride	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Chlorobenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Chloroethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Chloroform	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Chloromethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
cis-1,2-Dichloroethene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
cis-1,3-Dichloropropene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Dibromochloromethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-1600

Lab ID: 1602700-16

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Dichlorodifluoromethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Ethylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Hexachlorobutadiene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Isopropylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
m,p-Xylene	ND	5.0	5	B6H0182	08/05/2016	08/05/16 17:29	
Methylene chloride	ND	5.0	5	B6H0182	08/05/2016	08/05/16 17:29	
n-Butylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
n-Propylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Naphthalene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
o-Xylene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
sec-Butylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Styrene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
tert-Butylbenzene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Tetrachloroethene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Toluene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
trans-1,2-Dichloroethene	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Trichloroethene	6.4	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Trichlorofluoromethane	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
Vinyl chloride	ND	2.5	5	B6H0182	08/05/2016	08/05/16 17:29	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.4 %</i>	<i>51 - 157</i>		B6H0182	08/05/2016	<i>08/05/16 17:29</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97.1 %</i>	<i>51 - 157</i>		B6H0182	08/05/2016	<i>08/05/16 17:52</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.0 %</i>	<i>61 - 123</i>		B6H0182	08/05/2016	<i>08/05/16 17:29</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.3 %</i>	<i>61 - 123</i>		B6H0182	08/05/2016	<i>08/05/16 17:52</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>97.8 %</i>	<i>57 - 147</i>		B6H0182	08/05/2016	<i>08/05/16 17:52</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.0 %</i>	<i>57 - 147</i>		B6H0182	08/05/2016	<i>08/05/16 17:29</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>61 - 119</i>		B6H0182	08/05/2016	<i>08/05/16 17:52</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6H0182	08/05/2016	<i>08/05/16 17:29</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-1600

Lab ID: 1602700-16

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	29	2.0	1	B6H0172	08/05/2016	08/08/16 13:31	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>60.9 %</i>	<i>42 - 106</i>		B6H0172	08/05/2016	<i>08/08/16 13:31</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>70.4 %</i>	<i>55 - 117</i>		B6H0172	08/05/2016	<i>08/08/16 13:31</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>88.7 %</i>	<i>52 - 142</i>		B6H0172	08/05/2016	<i>08/08/16 13:31</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>78.0 %</i>	<i>43 - 116</i>		B6H0172	08/05/2016	<i>08/08/16 13:31</i>	



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San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-20

Lab ID: 1602700-17

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	B6H0135	08/04/2016	08/04/16 19:14	
1,1,1-Trichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,1,2-Trichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,1-Dichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,1-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,1-Dichloropropene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,2,3-Trichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,2-Dibromoethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,2-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,2-Dichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,2-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,3-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,3-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
1,4-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
2,2-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
2-Chlorotoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
4-Chlorotoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
4-Isopropyltoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Benzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Bromobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Bromodichloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Bromoform	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Bromomethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Carbon tetrachloride	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Chlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Chloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Chloroform	0.85	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Chloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Dibromochloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-20

Lab ID: 1602700-17

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	B6H0135	08/04/2016	08/04/16 19:14	
Dichlorodifluoromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Ethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Hexachlorobutadiene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Isopropylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
m,p-Xylene	ND	1.0	1	B6H0135	08/04/2016	08/04/16 19:14	
Methylene chloride	ND	1.0	1	B6H0135	08/04/2016	08/04/16 19:14	
n-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
n-Propylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Naphthalene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
o-Xylene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
sec-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Styrene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
tert-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Tetrachloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Toluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Trichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Trichlorofluoromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Vinyl chloride	ND	0.50	1	B6H0135	08/04/2016	08/04/16 19:14	
Surrogate: 1,2-Dichloroethane-d4	151 %	51 - 157		B6H0135	08/04/2016	08/04/16 19:14	
Surrogate: 4-Bromofluorobenzene	100 %	61 - 123		B6H0135	08/04/2016	08/04/16 19:14	
Surrogate: Dibromofluoromethane	146 %	57 - 147		B6H0135	08/04/2016	08/04/16 19:14	
Surrogate: Toluene-d8	103 %	61 - 119		B6H0135	08/04/2016	08/04/16 19:14	



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San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-20

Lab ID: 1602700-17

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	B6H0136	08/04/2016	08/05/16 13:25	
Surrogate: 1,2-Dichlorobenzene-d4	90.2 %	31 - 106		B6H0136	08/04/2016	08/05/16 13:25	
Surrogate: 2-Fluorobiphenyl	60.6 %	28 - 122		B6H0136	08/04/2016	08/05/16 13:25	
Surrogate: 4-Terphenyl-d14	79.2 %	43 - 131		B6H0136	08/04/2016	08/05/16 13:25	
Surrogate: Nitrobenzene-d5	117 %	20 - 119		B6H0136	08/04/2016	08/05/16 13:25	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-26C

Lab ID: 1602700-18

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	B6H0135	08/04/2016	08/04/16 18:01	
1,1,1-Trichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,1,2-Trichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,1-Dichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,1-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,1-Dichloropropene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,2,3-Trichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,2-Dibromoethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,2-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,2-Dichloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,2-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,3-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,3-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
1,4-Dichlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
2,2-Dichloropropane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
2-Chlorotoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
4-Chlorotoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
4-Isopropyltoluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Benzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Bromobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Bromodichloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Bromoform	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Bromomethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Carbon tetrachloride	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Chlorobenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Chloroethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Chloroform	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Chloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Dibromochloromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-26C

Lab ID: 1602700-18

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	B6H0135	08/04/2016	08/04/16 18:01	
Dichlorodifluoromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Ethylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Hexachlorobutadiene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Isopropylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
m,p-Xylene	ND	1.0	1	B6H0135	08/04/2016	08/04/16 18:01	
Methylene chloride	ND	1.0	1	B6H0135	08/04/2016	08/04/16 18:01	
n-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
n-Propylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Naphthalene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
o-Xylene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
sec-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Styrene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
tert-Butylbenzene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Tetrachloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Toluene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Trichloroethene	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Trichlorofluoromethane	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Vinyl chloride	ND	0.50	1	B6H0135	08/04/2016	08/04/16 18:01	
Surrogate: 1,2-Dichloroethane-d4	146 %	51 - 157		B6H0135	08/04/2016	08/04/16 18:01	
Surrogate: 4-Bromofluorobenzene	101 %	61 - 123		B6H0135	08/04/2016	08/04/16 18:01	
Surrogate: Dibromofluoromethane	129 %	57 - 147		B6H0135	08/04/2016	08/04/16 18:01	
Surrogate: Toluene-d8	103 %	61 - 119		B6H0135	08/04/2016	08/04/16 18:01	



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San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Client Sample ID MW-26C

Lab ID: 1602700-18

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	B6H0136	08/04/2016	08/05/16 13:53	
Surrogate: 1,2-Dichlorobenzene-d4	77.5 %	31 - 106		B6H0136	08/04/2016	08/05/16 13:53	
Surrogate: 2-Fluorobiphenyl	63.4 %	28 - 122		B6H0136	08/04/2016	08/05/16 13:53	
Surrogate: 4-Terphenyl-d14	76.4 %	43 - 131		B6H0136	08/04/2016	08/05/16 13:53	
Surrogate: Nitrobenzene-d5	95.1 %	20 - 119		B6H0136	08/04/2016	08/05/16 13:53	



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San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

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

Batch B6H0097 - MSVOA_W

Blank (B6H0097-BLK1)

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

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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Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

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

Batch B6H0097 - MSVOA_W (continued)

Blank (B6H0097-BLK1) - Continued

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

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				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>35.41</i>		<i>25.0000</i>		<i>142</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>25.22</i>		<i>25.0000</i>		<i>101</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>36.46</i>		<i>25.0000</i>		<i>146</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.43</i>		<i>25.0000</i>		<i>102</i>	<i>61 - 119</i>			

LCS (B6H0097-BS1)

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

1,1,1,2-Tetrachloroethane	19.8900	0.50	20.0000		99.4	76 - 132			
1,1,1-Trichloroethane	23.1100	0.50	20.0000		116	72 - 144			
1,1,2,2-Tetrachloroethane	14.7100	0.50	20.0000		73.6	70 - 120			
1,1,2-Trichloroethane	16.5200	0.50	20.0000		82.6	75 - 120			
1,1-Dichloroethane	24.1800	0.50	20.0000		121	65 - 127			
1,1-Dichloroethene	23.5100	0.50	20.0000		118	63 - 142			
1,1-Dichloropropene	19.3500	0.50	20.0000		96.8	78 - 137			
1,2,3-Trichloropropane	15.3400	0.50	20.0000		76.7	73 - 118			
1,2,3-Trichlorobenzene	15.2700	0.50	20.0000		76.4	53 - 164			
1,2,4-Trichlorobenzene	15.3600	0.50	20.0000		76.8	58 - 144			
1,2,4-Trimethylbenzene	17.3700	0.50	20.0000		86.8	75 - 140			
1,2-Dibromo-3-chloropropane	14.0500	0.50	20.0000		70.2	61 - 131			
1,2-Dibromoethane	16.6100	0.50	20.0000		83.0	74 - 125			
1,2-Dichlorobenzene	17.3400	0.50	20.0000		86.7	78 - 122			
1,2-Dichloroethane	20.5800	0.50	20.0000		103	70 - 126			
1,2-Dichloropropane	16.4400	0.50	20.0000		82.2	69 - 120			
1,3,5-Trimethylbenzene	18.0800	0.50	20.0000		90.4	73 - 145			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

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

Batch B6H0097 - MSVOA_W (continued)

LCS (B6H0097-BS1) - Continued

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

1,3-Dichlorobenzene	17.8400	0.50	20.0000		89.2	76 - 126			
1,3-Dichloropropane	15.7300	0.50	20.0000		78.6	76 - 117			
1,4-Dichlorobenzene	18.0300	0.50	20.0000		90.2	77 - 120			
2,2-Dichloropropane	21.2700	0.50	20.0000		106	47 - 169			
2-Chlorotoluene	17.9900	0.50	20.0000		90.0	75 - 135			
4-Chlorotoluene	18.0700	0.50	20.0000		90.4	70 - 133			
4-Isopropyltoluene	17.3300	0.50	20.0000		86.6	72 - 153			
Benzene	35.3200	0.50	40.0000		88.3	73 - 123			
Bromobenzene	17.7200	0.50	20.0000		88.6	75 - 121			
Bromodichloromethane	19.4000	0.50	20.0000		97.0	73 - 124			
Bromoform	20.0100	0.50	20.0000		100	70 - 135			
Bromomethane	20.4400	0.50	20.0000		102	10 - 166			
Carbon tetrachloride	26.5200	0.50	20.0000		133	65 - 171			
Chlorobenzene	17.9800	0.50	20.0000		89.9	80 - 121			
Chloroethane	24.1400	0.50	20.0000		121	55 - 143			
Chloroform	22.7200	0.50	20.0000		114	65 - 130			
Chloromethane	29.5200	0.50	20.0000		148	21 - 141			L4
cis-1,2-Dichloroethene	21.8400	0.50	20.0000		109	64 - 126			
cis-1,3-Dichloropropene	17.6700	0.50	20.0000		88.4	70 - 131			
Dibromochloromethane	19.2100	0.50	20.0000		96.0	74 - 125			
Dibromomethane	18.0800	0.50	20.0000		90.4	74 - 116			
Dichlorodifluoromethane	24.1000	0.50	20.0000		120	40 - 186			
Ethylbenzene	35.8900	0.50	40.0000		89.7	77 - 130			
Hexachlorobutadiene	18.4600	0.50	20.0000		92.3	52 - 176			
Isopropylbenzene	18.9800	0.50	20.0000		94.9	77 - 144			
m,p-Xylene	37.9700	1.0	40.0000		94.9	84 - 136			
Methylene chloride	18.8200	1.0	20.0000		94.1	72 - 150			
n-Butylbenzene	16.2900	0.50	20.0000		81.4	73 - 154			
n-Propylbenzene	18.1500	0.50	20.0000		90.8	77 - 145			
Naphthalene	11.8500	0.50	20.0000		59.2	55 - 137			
o-Xylene	35.9300	0.50	40.0000		89.8	79 - 135			
sec-Butylbenzene	17.8500	0.50	20.0000		89.2	73 - 157			
Styrene	17.3300	0.50	20.0000		86.6	78 - 125			
tert-Butylbenzene	18.2400	0.50	20.0000		91.2	78 - 149			
Tetrachloroethene	18.9100	0.50	20.0000		94.6	74 - 136			
Toluene	35.5900	0.50	40.0000		89.0	78 - 124			
trans-1,2-Dichloroethene	22.2200	0.50	20.0000		111	66 - 131			
Trichloroethene	18.7400	0.50	20.0000		93.7	78 - 128			
Trichlorofluoromethane	29.4200	0.50	20.0000		147	60 - 170			
Vinyl chloride	24.0400	0.50	20.0000		120	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	31.47		25.0000		126	51 - 157			



Certificate of Analysis

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Report To : Steve Netto

Reported : 08/10/2016

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

Batch B6H0097 - MSVOA_W (continued)

LCS (B6H0097-BS1) - Continued

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

Surrogate: 4-Bromofluorobenzene	26.66		25.0000		107	61 - 123			
Surrogate: Dibromofluoromethane	33.21		25.0000		133	57 - 147			
Surrogate: Toluene-d8	26.52		25.0000		106	61 - 119			

LCS Dup (B6H0097-BSD1)

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

1,1,1,2-Tetrachloroethane	18.7400	0.50	20.0000		93.7	76 - 132	5.95	20	
1,1,1-Trichloroethane	22.5300	0.50	20.0000		113	72 - 144	2.54	20	
1,1,2,2-Tetrachloroethane	14.1900	0.50	20.0000		71.0	70 - 120	3.60	20	
1,1,2-Trichloroethane	15.9400	0.50	20.0000		79.7	75 - 120	3.57	20	
1,1-Dichloroethane	23.4100	0.50	20.0000		117	65 - 127	3.24	20	
1,1-Dichloroethene	22.5700	0.50	20.0000		113	63 - 142	4.08	20	
1,1-Dichloropropene	17.7400	0.50	20.0000		88.7	78 - 137	8.68	20	
1,2,3-Trichloropropane	14.6700	0.50	20.0000		73.4	73 - 118	4.47	20	
1,2,3-Trichlorobenzene	14.4700	0.50	20.0000		72.4	53 - 164	5.38	20	
1,2,4-Trichlorobenzene	14.2500	0.50	20.0000		71.2	58 - 144	7.50	20	
1,2,4-Trimethylbenzene	16.3300	0.50	20.0000		81.6	75 - 140	6.17	20	
1,2-Dibromo-3-chloropropane	12.9700	0.50	20.0000		64.8	61 - 131	7.99	20	
1,2-Dibromoethane	16.2000	0.50	20.0000		81.0	74 - 125	2.50	20	
1,2-Dichlorobenzene	16.2500	0.50	20.0000		81.2	78 - 122	6.49	20	
1,2-Dichloroethane	19.8400	0.50	20.0000		99.2	70 - 126	3.66	20	
1,2-Dichloropropane	15.6100	0.50	20.0000		78.0	69 - 120	5.18	20	
1,3,5-Trimethylbenzene	16.9200	0.50	20.0000		84.6	73 - 145	6.63	20	
1,3-Dichlorobenzene	16.9000	0.50	20.0000		84.5	76 - 126	5.41	20	
1,3-Dichloropropane	14.8900	0.50	20.0000		74.4	76 - 117	5.49	20	L4
1,4-Dichlorobenzene	16.2600	0.50	20.0000		81.3	77 - 120	10.3	20	
2,2-Dichloropropane	20.6600	0.50	20.0000		103	47 - 169	2.91	20	
2-Chlorotoluene	17.0900	0.50	20.0000		85.4	75 - 135	5.13	20	
4-Chlorotoluene	16.6600	0.50	20.0000		83.3	70 - 133	8.12	20	
4-Isopropyltoluene	16.2800	0.50	20.0000		81.4	72 - 153	6.25	20	
Benzene	32.9100	0.50	40.0000		82.3	73 - 123	7.06	20	
Bromobenzene	16.6000	0.50	20.0000		83.0	75 - 121	6.53	20	
Bromodichloromethane	18.4400	0.50	20.0000		92.2	73 - 124	5.07	20	
Bromoform	19.3400	0.50	20.0000		96.7	70 - 135	3.41	20	
Bromomethane	19.5900	0.50	20.0000		98.0	10 - 166	4.25	20	
Carbon tetrachloride	24.6000	0.50	20.0000		123	65 - 171	7.51	20	
Chlorobenzene	16.7800	0.50	20.0000		83.9	80 - 121	6.90	20	
Chloroethane	22.8700	0.50	20.0000		114	55 - 143	5.40	20	
Chloroform	21.9500	0.50	20.0000		110	65 - 130	3.45	20	
Chloromethane	28.1300	0.50	20.0000		141	21 - 141	4.82	20	
cis-1,2-Dichloroethene	20.9800	0.50	20.0000		105	64 - 126	4.02	20	
cis-1,3-Dichloropropene	17.0400	0.50	20.0000		85.2	70 - 131	3.63	20	
Dibromochloromethane	17.7900	0.50	20.0000		89.0	74 - 125	7.68	20	



Certificate of Analysis

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Reported : 08/10/2016

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

Batch B6H0097 - MSVOA_W (continued)

LCS Dup (B6H0097-BSD1) - Continued

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

Dibromomethane	17.1900	0.50	20.0000		86.0	74 - 116	5.05	20	
Dichlorodifluoromethane	23.1300	0.50	20.0000		116	40 - 186	4.11	20	
Ethylbenzene	32.9800	0.50	40.0000		82.4	77 - 130	8.45	20	
Hexachlorobutadiene	17.4300	0.50	20.0000		87.2	52 - 176	5.74	20	
Isopropylbenzene	17.9200	0.50	20.0000		89.6	77 - 144	5.75	20	
m,p-Xylene	35.1200	1.0	40.0000		87.8	84 - 136	7.80	20	
Methylene chloride	18.0400	1.0	20.0000		90.2	72 - 150	4.23	20	
n-Butylbenzene	15.0300	0.50	20.0000		75.2	73 - 154	8.05	20	
n-Propylbenzene	16.9800	0.50	20.0000		84.9	77 - 145	6.66	20	
Naphthalene	11.5200	0.50	20.0000		57.6	55 - 137	2.82	20	
o-Xylene	33.3400	0.50	40.0000		83.4	79 - 135	7.48	20	
sec-Butylbenzene	16.5200	0.50	20.0000		82.6	73 - 157	7.74	20	
Styrene	16.3800	0.50	20.0000		81.9	78 - 125	5.64	20	
tert-Butylbenzene	16.8200	0.50	20.0000		84.1	78 - 149	8.10	20	
Tetrachloroethene	17.0400	0.50	20.0000		85.2	74 - 136	10.4	20	
Toluene	33.7900	0.50	40.0000		84.5	78 - 124	5.19	20	
trans-1,2-Dichloroethene	20.9000	0.50	20.0000		104	66 - 131	6.12	20	
Trichloroethene	17.4700	0.50	20.0000		87.4	78 - 128	7.01	20	
Trichlorofluoromethane	28.1100	0.50	20.0000		141	60 - 170	4.55	20	
Vinyl chloride	22.7600	0.50	20.0000		114	55 - 148	5.47	20	
Surrogate: 1,2-Dichloroethane-d4	30.98		25.0000		124	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.70		25.0000		103	61 - 123			
Surrogate: Dibromofluoromethane	33.16		25.0000		133	57 - 147			
Surrogate: Toluene-d8	26.10		25.0000		104	61 - 119			



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Reported : 08/10/2016

Volatile Organic Compounds by EPA 8260B - Quality Control

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

Batch B6H0135 - MSVOA_W

Blank (B6H0135-BLK1)

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

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 Limits	RPD	RPD Limit	Notes

Batch B6H0135 - MSVOA_W (continued)

Blank (B6H0135-BLK1) - Continued

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

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			
Surrogate: 1,2-Dichloroethane-d4	35.13		25.0000		141	51 - 157		
Surrogate: 4-Bromofluorobenzene	25.32		25.0000		101	61 - 123		
Surrogate: Dibromofluoromethane	32.97		25.0000		132	57 - 147		
Surrogate: Toluene-d8	25.60		25.0000		102	61 - 119		

LCS (B6H0135-BS1)

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

1,1,1,2-Tetrachloroethane	19.0300	0.50	20.0000		95.2	76 - 132		
1,1,1-Trichloroethane	22.8800	0.50	20.0000		114	72 - 144		
1,1,2,2-Tetrachloroethane	14.5100	0.50	20.0000		72.6	70 - 120		
1,1,2-Trichloroethane	16.4600	0.50	20.0000		82.3	75 - 120		
1,1-Dichloroethane	24.4300	0.50	20.0000		122	65 - 127		
1,1-Dichloroethene	23.1100	0.50	20.0000		116	63 - 142		
1,1-Dichloropropene	18.5500	0.50	20.0000		92.8	78 - 137		
1,2,3-Trichloropropane	15.0600	0.50	20.0000		75.3	73 - 118		
1,2,3-Trichlorobenzene	14.2000	0.50	20.0000		71.0	53 - 164		
1,2,4-Trichlorobenzene	14.2100	0.50	20.0000		71.0	58 - 144		
1,2,4-Trimethylbenzene	16.1500	0.50	20.0000		80.8	75 - 140		
1,2-Dibromo-3-chloropropane	13.5700	0.50	20.0000		67.8	61 - 131		
1,2-Dibromoethane	17.1200	0.50	20.0000		85.6	74 - 125		
1,2-Dichlorobenzene	16.2600	0.50	20.0000		81.3	78 - 122		
1,2-Dichloroethane	20.6600	0.50	20.0000		103	70 - 126		
1,2-Dichloropropane	15.7800	0.50	20.0000		78.9	69 - 120		
1,3,5-Trimethylbenzene	16.7600	0.50	20.0000		83.8	73 - 145		
1,3-Dichlorobenzene	16.8400	0.50	20.0000		84.2	76 - 126		
1,3-Dichloropropane	15.2800	0.50	20.0000		76.4	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 Limit	Notes

Batch B6H0135 - MSVOA_W (continued)

LCS (B6H0135-BS1) - Continued

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

1,4-Dichlorobenzene	16.4000	0.50	20.0000		82.0	77 - 120			
2,2-Dichloropropane	21.2500	0.50	20.0000		106	47 - 169			
2-Chlorotoluene	16.6200	0.50	20.0000		83.1	75 - 135			
4-Chlorotoluene	16.6600	0.50	20.0000		83.3	70 - 133			
4-Isopropyltoluene	15.9100	0.50	20.0000		79.6	72 - 153			
Benzene	33.4300	0.50	40.0000		83.6	73 - 123			
Bromobenzene	16.5900	0.50	20.0000		83.0	75 - 121			
Bromodichloromethane	18.9300	0.50	20.0000		94.6	73 - 124			
Bromoform	19.6500	0.50	20.0000		98.2	70 - 135			
Bromomethane	18.8000	0.50	20.0000		94.0	10 - 166			
Carbon tetrachloride	25.8200	0.50	20.0000		129	65 - 171			
Chlorobenzene	17.1400	0.50	20.0000		85.7	80 - 121			
Chloroethane	23.7700	0.50	20.0000		119	55 - 143			
Chloroform	22.9700	0.50	20.0000		115	65 - 130			
Chloromethane	29.7900	0.50	20.0000		149	21 - 141			L4
cis-1,2-Dichloroethene	21.1200	0.50	20.0000		106	64 - 126			
cis-1,3-Dichloropropene	17.3600	0.50	20.0000		86.8	70 - 131			
Dibromochloromethane	18.5500	0.50	20.0000		92.8	74 - 125			
Dibromomethane	17.6000	0.50	20.0000		88.0	74 - 116			
Dichlorodifluoromethane	22.8000	0.50	20.0000		114	40 - 186			
Ethylbenzene	33.5200	0.50	40.0000		83.8	77 - 130			
Hexachlorobutadiene	17.5800	0.50	20.0000		87.9	52 - 176			
Isopropylbenzene	17.5000	0.50	20.0000		87.5	77 - 144			
m,p-Xylene	35.7100	1.0	40.0000		89.3	84 - 136			
Methylene chloride	18.6400	1.0	20.0000		93.2	72 - 150			
n-Butylbenzene	14.7600	0.50	20.0000		73.8	73 - 154			
n-Propylbenzene	16.6700	0.50	20.0000		83.4	77 - 145			
Naphthalene	10.9300	0.50	20.0000		54.6	55 - 137			L4
o-Xylene	33.9100	0.50	40.0000		84.8	79 - 135			
sec-Butylbenzene	16.4500	0.50	20.0000		82.2	73 - 157			
Styrene	16.7600	0.50	20.0000		83.8	78 - 125			
tert-Butylbenzene	16.4900	0.50	20.0000		82.4	78 - 149			
Tetrachloroethene	17.4300	0.50	20.0000		87.2	74 - 136			
Toluene	34.9200	0.50	40.0000		87.3	78 - 124			
trans-1,2-Dichloroethene	21.6300	0.50	20.0000		108	66 - 131			
Trichloroethene	17.8500	0.50	20.0000		89.2	78 - 128			
Trichlorofluoromethane	28.2000	0.50	20.0000		141	60 - 170			
Vinyl chloride	23.1600	0.50	20.0000		116	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	31.74		25.0000		127	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.70		25.0000		103	61 - 123			
Surrogate: Dibromofluoromethane	32.70		25.0000		131	57 - 147			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

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

Batch B6H0135 - MSVOA_W (continued)

LCS (B6H0135-BS1) - Continued

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

Surrogate: Toluene-d8

26.18

25.0000

105

61 - 119

LCS Dup (B6H0135-BS1)

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

1,1,1,2-Tetrachloroethane	20.2100	0.50	20.0000	101	76 - 132	6.01	20	
1,1,1-Trichloroethane	22.8300	0.50	20.0000	114	72 - 144	0.219	20	
1,1,2,2-Tetrachloroethane	16.3900	0.50	20.0000	82.0	70 - 120	12.2	20	
1,1,2-Trichloroethane	17.6000	0.50	20.0000	88.0	75 - 120	6.69	20	
1,1-Dichloroethane	24.6100	0.50	20.0000	123	65 - 127	0.734	20	
1,1-Dichloroethene	23.8000	0.50	20.0000	119	63 - 142	2.94	20	
1,1-Dichloropropene	19.2800	0.50	20.0000	96.4	78 - 137	3.86	20	
1,2,3-Trichloropropane	16.9500	0.50	20.0000	84.8	73 - 118	11.8	20	
1,2,3-Trichlorobenzene	15.5200	0.50	20.0000	77.6	53 - 164	8.88	20	
1,2,4-Trichlorobenzene	15.2800	0.50	20.0000	76.4	58 - 144	7.26	20	
1,2,4-Trimethylbenzene	17.1500	0.50	20.0000	85.8	75 - 140	6.01	20	
1,2-Dibromo-3-chloropropane	15.4200	0.50	20.0000	77.1	61 - 131	12.8	20	
1,2-Dibromoethane	18.0700	0.50	20.0000	90.4	74 - 125	5.40	20	
1,2-Dichlorobenzene	17.4700	0.50	20.0000	87.4	78 - 122	7.17	20	
1,2-Dichloroethane	22.3400	0.50	20.0000	112	70 - 126	7.81	20	
1,2-Dichloropropane	16.7400	0.50	20.0000	83.7	69 - 120	5.90	20	
1,3,5-Trimethylbenzene	17.7300	0.50	20.0000	88.6	73 - 145	5.62	20	
1,3-Dichlorobenzene	17.4900	0.50	20.0000	87.4	76 - 126	3.79	20	
1,3-Dichloropropane	16.8300	0.50	20.0000	84.2	76 - 117	9.65	20	
1,4-Dichlorobenzene	17.5400	0.50	20.0000	87.7	77 - 120	6.72	20	
2,2-Dichloropropane	22.2600	0.50	20.0000	111	47 - 169	4.64	20	
2-Chlorotoluene	17.8100	0.50	20.0000	89.0	75 - 135	6.91	20	
4-Chlorotoluene	17.7500	0.50	20.0000	88.8	70 - 133	6.34	20	
4-Isopropyltoluene	16.8100	0.50	20.0000	84.0	72 - 153	5.50	20	
Benzene	35.3500	0.50	40.0000	88.4	73 - 123	5.58	20	
Bromobenzene	17.7900	0.50	20.0000	89.0	75 - 121	6.98	20	
Bromodichloromethane	19.7200	0.50	20.0000	98.6	73 - 124	4.09	20	
Bromoform	21.7400	0.50	20.0000	109	70 - 135	10.1	20	
Bromomethane	19.8400	0.50	20.0000	99.2	10 - 166	5.38	20	
Carbon tetrachloride	26.5800	0.50	20.0000	133	65 - 171	2.90	20	
Chlorobenzene	18.1200	0.50	20.0000	90.6	80 - 121	5.56	20	
Chloroethane	24.9200	0.50	20.0000	125	55 - 143	4.72	20	
Chloroform	23.4800	0.50	20.0000	117	65 - 130	2.20	20	
Chloromethane	28.5100	0.50	20.0000	143	21 - 141	4.39	20	L4
cis-1,2-Dichloroethene	22.5700	0.50	20.0000	113	64 - 126	6.64	20	
cis-1,3-Dichloropropene	18.0100	0.50	20.0000	90.0	70 - 131	3.68	20	
Dibromochloromethane	20.2900	0.50	20.0000	101	74 - 125	8.96	20	
Dibromomethane	18.8800	0.50	20.0000	94.4	74 - 116	7.02	20	
Dichlorodifluoromethane	22.3000	0.50	20.0000	112	40 - 186	2.22	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

Batch B6H0135 - MSVOA_W (continued)

LCS Dup (B6H0135-BSD1) - Continued

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

Ethylbenzene	35.3000	0.50	40.0000		88.2	77 - 130	5.17	20	
Hexachlorobutadiene	18.4000	0.50	20.0000		92.0	52 - 176	4.56	20	
Isopropylbenzene	18.7500	0.50	20.0000		93.8	77 - 144	6.90	20	
m,p-Xylene	38.0200	1.0	40.0000		95.0	84 - 136	6.27	20	
Methylene chloride	18.8000	1.0	20.0000		94.0	72 - 150	0.855	20	
n-Butylbenzene	15.5100	0.50	20.0000		77.6	73 - 154	4.96	20	
n-Propylbenzene	17.7100	0.50	20.0000		88.6	77 - 145	6.05	20	
Naphthalene	12.7600	0.50	20.0000		63.8	55 - 137	15.4	20	
o-Xylene	35.8100	0.50	40.0000		89.5	79 - 135	5.45	20	
sec-Butylbenzene	17.6400	0.50	20.0000		88.2	73 - 157	6.98	20	
Styrene	17.7800	0.50	20.0000		88.9	78 - 125	5.91	20	
tert-Butylbenzene	17.6700	0.50	20.0000		88.4	78 - 149	6.91	20	
Tetrachloroethene	18.6400	0.50	20.0000		93.2	74 - 136	6.71	20	
Toluene	35.6800	0.50	40.0000		89.2	78 - 124	2.15	20	
trans-1,2-Dichloroethene	22.1900	0.50	20.0000		111	66 - 131	2.56	20	
Trichloroethene	18.5900	0.50	20.0000		93.0	78 - 128	4.06	20	
Trichlorofluoromethane	29.7300	0.50	20.0000		149	60 - 170	5.28	20	
Vinyl chloride	23.0400	0.50	20.0000		115	55 - 148	0.519	20	
Surrogate: 1,2-Dichloroethane-d4	31.92		25.0000		128	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.77		25.0000		103	61 - 123			
Surrogate: Dibromofluoromethane	30.75		25.0000		123	57 - 147			
Surrogate: Toluene-d8	25.84		25.0000		103	61 - 119			

Matrix Spike (B6H0135-MS1)

Source: 1602700-03RE1

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

1,1,1,2-Tetrachloroethane	207.000	5.0	200.000	ND	104	76 - 132			
1,1,1-Trichloroethane	259.900	5.0	200.000	ND	130	72 - 144			
1,1,2,2-Tetrachloroethane	163.000	5.0	200.000	ND	81.5	70 - 120			
1,1,2-Trichloroethane	191.700	5.0	200.000	ND	95.8	75 - 120			
1,1-Dichloroethane	283.900	5.0	200.000	6.00000	139	65 - 127			M2
1,1-Dichloroethene	668.400	5.0	200.000	434.400	117	63 - 142			
1,1-Dichloropropene	185.500	5.0	200.000	ND	92.8	78 - 137			
1,2,3-Trichloropropane	172.900	5.0	200.000	ND	86.4	73 - 118			
1,2,3-Trichlorobenzene	146.500	5.0	200.000	ND	73.2	53 - 164			
1,2,4-Trichlorobenzene	142.500	5.0	200.000	ND	71.2	58 - 144			
1,2,4-Trimethylbenzene	168.100	5.0	200.000	ND	84.0	75 - 140			
1,2-Dibromo-3-chloropropane	149.500	5.0	200.000	ND	74.8	61 - 131			
1,2-Dibromoethane	188.500	5.0	200.000	ND	94.2	74 - 125			
1,2-Dichlorobenzene	172.800	5.0	200.000	ND	86.4	78 - 122			
1,2-Dichloroethane	244.200	5.0	200.000	ND	122	70 - 126			
1,2-Dichloropropane	168.300	5.0	200.000	ND	84.2	69 - 120			
1,3,5-Trimethylbenzene	177.200	5.0	200.000	ND	88.6	73 - 145			



Certificate of Analysis

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Reported : 08/10/2016

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

Batch B6H0135 - MSVOA_W (continued)

Matrix Spike (B6H0135-MS1) - Continued

Source: 1602700-03RE1

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

1,3-Dichlorobenzene	176.900	5.0	200.000	ND	88.4	76 - 126			
1,3-Dichloropropane	165.900	5.0	200.000	ND	83.0	76 - 117			
1,4-Dichlorobenzene	173.500	5.0	200.000	ND	86.8	77 - 120			
2,2-Dichloropropane	236.400	5.0	200.000	ND	118	47 - 169			
2-Chlorotoluene	174.700	5.0	200.000	ND	87.4	75 - 135			
4-Chlorotoluene	177.100	5.0	200.000	ND	88.6	77 - 130			
4-Isopropyltoluene	162.100	5.0	200.000	ND	81.0	72 - 153			
Benzene	346.100	5.0	400.000	ND	86.5	73 - 123			
Bromobenzene	174.100	5.0	200.000	ND	87.0	75 - 121			
Bromodichloromethane	212.000	5.0	200.000	ND	106	73 - 124			
Bromoform	221.600	5.0	200.000	ND	111	70 - 135			
Bromomethane	232.200	5.0	200.000	ND	116	10 - 166			
Carbon tetrachloride	302.500	5.0	200.000	ND	151	65 - 171			
Chlorobenzene	179.500	5.0	200.000	ND	89.8	80 - 121			
Chloroethane	263.800	5.0	200.000	ND	132	55 - 143			
Chloroform	273.000	5.0	200.000	ND	136	65 - 130			M2
Chloromethane	291.500	5.0	200.000	2.40000	145	21 - 141			M2
cis-1,2-Dichloroethene	246.300	5.0	200.000	ND	123	64 - 126			
cis-1,3-Dichloropropene	159.600	5.0	200.000	ND	79.8	70 - 131			
Dibromochloromethane	203.700	5.0	200.000	ND	102	74 - 125			
Dibromomethane	195.400	5.0	200.000	ND	97.7	74 - 116			
Dichlorodifluoromethane	244.500	5.0	200.000	ND	122	40 - 186			
Ethylbenzene	361.200	5.0	400.000	ND	90.3	77 - 130			
Hexachlorobutadiene	182.400	5.0	200.000	ND	91.2	52 - 176			
Isopropylbenzene	183.400	5.0	200.000	ND	91.7	77 - 144			
m,p-Xylene	384.000	10	400.000	ND	96.0	84 - 136			
Methylene chloride	207.900	10	200.000	ND	104	72 - 150			
n-Butylbenzene	139.900	5.0	200.000	ND	70.0	73 - 154			M2
n-Propylbenzene	173.800	5.0	200.000	ND	86.9	77 - 145			
Naphthalene	112.600	5.0	200.000	ND	56.3	55 - 137			
o-Xylene	362.700	5.0	400.000	ND	90.7	79 - 135			
sec-Butylbenzene	171.500	5.0	200.000	ND	85.8	73 - 157			
Styrene	177.600	5.0	200.000	ND	88.8	78 - 125			
tert-Butylbenzene	175.600	5.0	200.000	ND	87.8	78 - 149			
Tetrachloroethene	175.400	5.0	200.000	ND	87.7	74 - 136			
Toluene	372.700	5.0	400.000	ND	93.2	78 - 124			
trans-1,2-Dichloroethene	243.000	5.0	200.000	ND	122	66 - 131			
Trichloroethene	180.900	5.0	200.000	ND	90.4	78 - 128			
Trichlorofluoromethane	357.000	5.0	200.000	ND	178	60 - 170			M2
Vinyl chloride	230.500	5.0	200.000	ND	115	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	35.63		25.0000		143	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

Batch B6H0135 - MSVOA_W (continued)

Matrix Spike (B6H0135-MS1) - Continued

Source: 1602700-03RE1

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

Surrogate: 4-Bromofluorobenzene	26.19		25.0000		105	61 - 123			
Surrogate: Dibromofluoromethane	34.17		25.0000		137	57 - 147			
Surrogate: Toluene-d8	25.40		25.0000		102	61 - 119			

Matrix Spike Dup (B6H0135-MSD1)

Source: 1602700-03RE1

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

1,1,1,2-Tetrachloroethane	226.100	5.0	200.000	ND	113	76 - 132	8.82	20	
1,1,1-Trichloroethane	267.100	5.0	200.000	ND	134	72 - 144	2.73	20	
1,1,2,2-Tetrachloroethane	177.100	5.0	200.000	ND	88.6	70 - 120	8.29	20	
1,1,2-Trichloroethane	205.100	5.0	200.000	ND	103	75 - 120	6.75	20	
1,1-Dichloroethane	299.100	5.0	200.000	6.00000	147	65 - 127	5.21	20	M2
1,1-Dichloroethene	673.000	5.0	200.000	434.400	119	63 - 142	0.686	20	
1,1-Dichloropropene	201.900	5.0	200.000	ND	101	78 - 137	8.47	20	
1,2,3-Trichloropropane	191.000	5.0	200.000	ND	95.5	73 - 118	9.95	20	
1,2,3-Trichlorobenzene	169.300	5.0	200.000	ND	84.6	53 - 164	14.4	20	
1,2,4-Trichlorobenzene	164.900	5.0	200.000	ND	82.4	58 - 144	14.6	20	
1,2,4-Trimethylbenzene	187.400	5.0	200.000	ND	93.7	75 - 140	10.9	20	
1,2-Dibromo-3-chloropropane	167.800	5.0	200.000	ND	83.9	61 - 131	11.5	20	
1,2-Dibromoethane	204.400	5.0	200.000	ND	102	74 - 125	8.09	20	
1,2-Dichlorobenzene	192.200	5.0	200.000	ND	96.1	78 - 122	10.6	20	
1,2-Dichloroethane	253.900	5.0	200.000	ND	127	70 - 126	3.89	20	M2
1,2-Dichloropropane	183.000	5.0	200.000	ND	91.5	69 - 120	8.37	20	
1,3,5-Trimethylbenzene	193.900	5.0	200.000	ND	97.0	73 - 145	9.00	20	
1,3-Dichlorobenzene	191.800	5.0	200.000	ND	95.9	76 - 126	8.08	20	
1,3-Dichloropropane	182.800	5.0	200.000	ND	91.4	76 - 117	9.69	20	
1,4-Dichlorobenzene	193.500	5.0	200.000	ND	96.8	77 - 120	10.9	20	
2,2-Dichloropropane	241.900	5.0	200.000	ND	121	47 - 169	2.30	20	
2-Chlorotoluene	191.100	5.0	200.000	ND	95.6	75 - 135	8.97	20	
4-Chlorotoluene	193.400	5.0	200.000	ND	96.7	77 - 130	8.80	20	
4-Isopropyltoluene	181.800	5.0	200.000	ND	90.9	72 - 153	11.5	20	
Benzene	386.300	5.0	400.000	ND	96.6	73 - 123	11.0	20	
Bromobenzene	191.400	5.0	200.000	ND	95.7	75 - 121	9.47	20	
Bromodichloromethane	225.400	5.0	200.000	ND	113	73 - 124	6.13	20	
Bromoform	242.900	5.0	200.000	ND	121	70 - 135	9.17	20	
Bromomethane	235.900	5.0	200.000	ND	118	10 - 166	1.58	20	
Carbon tetrachloride	311.200	5.0	200.000	ND	156	65 - 171	2.84	20	
Chlorobenzene	200.900	5.0	200.000	ND	100	80 - 121	11.3	20	
Chloroethane	293.600	5.0	200.000	ND	147	55 - 143	10.7	20	M2
Chloroform	281.600	5.0	200.000	ND	141	65 - 130	3.10	20	M2
Chloromethane	338.100	5.0	200.000	2.40000	168	21 - 141	14.8	20	M2
cis-1,2-Dichloroethene	260.400	5.0	200.000	ND	130	64 - 126	5.57	20	M2
cis-1,3-Dichloropropene	179.600	5.0	200.000	ND	89.8	70 - 131	11.8	20	
Dibromochloromethane	218.700	5.0	200.000	ND	109	74 - 125	7.10	20	



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

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6H0135 - MSVOA_W (continued)									
Matrix Spike Dup (B6H0135-MSD1) - Continued		Source: 1602700-03RE1		Prepared: 8/4/2016 Analyzed: 8/4/2016					
Dibromomethane	214.400	5.0	200.000	ND	107	74 - 116	9.27	20	
Dichlorodifluoromethane	265.900	5.0	200.000	ND	133	40 - 186	8.39	20	
Ethylbenzene	393.800	5.0	400.000	ND	98.4	77 - 130	8.64	20	
Hexachlorobutadiene	199.000	5.0	200.000	ND	99.5	52 - 176	8.70	20	
Isopropylbenzene	201.300	5.0	200.000	ND	101	77 - 144	9.31	20	
m,p-Xylene	419.400	10	400.000	ND	105	84 - 136	8.81	20	
Methylene chloride	221.600	10	200.000	ND	111	72 - 150	6.38	20	
n-Butylbenzene	165.200	5.0	200.000	ND	82.6	73 - 154	16.6	20	
n-Propylbenzene	191.200	5.0	200.000	ND	95.6	77 - 145	9.53	20	
Naphthalene	140.300	5.0	200.000	ND	70.2	55 - 137	21.9	20	R
o-Xylene	394.100	5.0	400.000	ND	98.5	79 - 135	8.30	20	
sec-Butylbenzene	188.400	5.0	200.000	ND	94.2	73 - 157	9.39	20	
Styrene	196.400	5.0	200.000	ND	98.2	78 - 125	10.1	20	
tert-Butylbenzene	193.100	5.0	200.000	ND	96.6	78 - 149	9.49	20	
Tetrachloroethene	195.200	5.0	200.000	ND	97.6	74 - 136	10.7	20	
Toluene	398.200	5.0	400.000	ND	99.6	78 - 124	6.62	20	
trans-1,2-Dichloroethene	262.000	5.0	200.000	ND	131	66 - 131	7.52	20	
Trichloroethene	198.400	5.0	200.000	ND	99.2	78 - 128	9.23	20	
Trichlorofluoromethane	359.400	5.0	200.000	ND	180	60 - 170	0.670	20	M2
Vinyl chloride	267.700	5.0	200.000	ND	134	55 - 148	14.9	20	
Surrogate: 1,2-Dichloroethane-d4	34.93		25.0000		140	51 - 157			
Surrogate: 4-Bromofluorobenzene	26.88		25.0000		108	61 - 123			
Surrogate: Dibromofluoromethane	33.24		25.0000		133	57 - 147			
Surrogate: Toluene-d8	25.58		25.0000		102	61 - 119			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Volatile Organic Compounds by EPA 8260B - Quality Control

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

Batch B6H0182 - MSVOA_LL_W

Blank (B6H0182-BLK1)

Prepared: 8/5/2016 Analyzed: 8/5/2016

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
Ethylbenzene	ND	0.50			NR
Hexachlorobutadiene	ND	0.50			NR



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Reported : 08/10/2016

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

Batch B6H0182 - MSVOA_LL_W (continued)

Blank (B6H0182-BLK1) - Continued

Prepared: 8/5/2016 Analyzed: 8/5/2016

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				

Surrogate: 1,2-Dichloroethane-d4	23.20		25.0000		92.8	51 - 157			
Surrogate: 4-Bromofluorobenzene	24.62		25.0000		98.5	61 - 123			
Surrogate: Dibromofluoromethane	24.10		25.0000		96.4	57 - 147			
Surrogate: Toluene-d8	25.01		25.0000		100	61 - 119			

LCS (B6H0182-BS1)

Prepared: 8/5/2016 Analyzed: 8/5/2016

1,1,1,2-Tetrachloroethane	21.2700	0.50	20.0000		106	76 - 132			
1,1,1-Trichloroethane	22.2000	0.50	20.0000		111	72 - 144			
1,1,2,2-Tetrachloroethane	18.1600	0.50	20.0000		90.8	70 - 120			
1,1,2-Trichloroethane	18.1300	0.50	20.0000		90.6	75 - 120			
1,1-Dichloroethane	20.0900	0.50	20.0000		100	65 - 127			
1,1-Dichloroethene	22.1100	0.50	20.0000		111	63 - 142			
1,1-Dichloropropene	22.4500	0.50	20.0000		112	78 - 137			
1,2,3-Trichloropropane	16.9600	0.50	20.0000		84.8	73 - 118			
1,2,3-Trichlorobenzene	19.4100	0.50	20.0000		97.0	53 - 164			
1,2,4-Trichlorobenzene	20.5300	0.50	20.0000		103	58 - 144			
1,2,4-Trimethylbenzene	21.3700	0.50	20.0000		107	75 - 140			
1,2-Dibromo-3-chloropropane	16.7200	0.50	20.0000		83.6	61 - 131			
1,2-Dibromoethane	17.6800	0.50	20.0000		88.4	74 - 125			
1,2-Dichlorobenzene	19.4500	0.50	20.0000		97.2	78 - 122			
1,2-Dichloroethane	18.5200	0.50	20.0000		92.6	70 - 126			
1,2-Dichloropropane	19.6900	0.50	20.0000		98.4	69 - 120			
1,3,5-Trimethylbenzene	21.7600	0.50	20.0000		109	73 - 145			
1,3-Dichlorobenzene	19.7700	0.50	20.0000		98.8	76 - 126			
1,3-Dichloropropane	19.1500	0.50	20.0000		95.8	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 Limit	Notes

Batch B6H0182 - MSVOA_LL_W (continued)

LCS (B6H0182-BS1) - Continued

Prepared: 8/5/2016 Analyzed: 8/5/2016

1,4-Dichlorobenzene	19.9100	0.50	20.0000		99.6	77 - 120			
2,2-Dichloropropane	22.7500	0.50	20.0000		114	47 - 169			
2-Chlorotoluene	21.2700	0.50	20.0000		106	75 - 135			
4-Chlorotoluene	20.8300	0.50	20.0000		104	70 - 133			
4-Isopropyltoluene	22.6500	0.50	20.0000		113	72 - 153			
Benzene	41.7000	0.50	40.0000		104	73 - 123			
Bromobenzene	20.0900	0.50	20.0000		100	75 - 121			
Bromodichloromethane	18.8200	0.50	20.0000		94.1	73 - 124			
Bromoform	17.6800	0.50	20.0000		88.4	70 - 135			
Bromomethane	30.3100	0.50	20.0000		152	10 - 166			
Carbon tetrachloride	24.0300	0.50	20.0000		120	65 - 171			
Chlorobenzene	19.9000	0.50	20.0000		99.5	80 - 121			
Chloroethane	29.3300	0.50	20.0000		147	55 - 143			L5
Chloroform	19.9800	0.50	20.0000		99.9	65 - 130			
Chloromethane	25.5500	0.50	20.0000		128	21 - 141			
cis-1,2-Dichloroethene	20.4500	0.50	20.0000		102	64 - 126			
cis-1,3-Dichloropropene	20.5200	0.50	20.0000		103	70 - 131			
Dibromochloromethane	20.3000	0.50	20.0000		102	74 - 125			
Dibromomethane	18.6000	0.50	20.0000		93.0	74 - 116			
Dichlorodifluoromethane	36.1200	0.50	20.0000		181	40 - 186			
Ethylbenzene	40.4200	0.50	40.0000		101	77 - 130			
Hexachlorobutadiene	22.4100	0.50	20.0000		112	52 - 176			
Isopropylbenzene	23.7100	0.50	20.0000		119	77 - 144			
m,p-Xylene	42.9400	1.0	40.0000		107	84 - 136			
Methylene chloride	16.8500	1.0	20.0000		84.2	72 - 150			
n-Butylbenzene	22.8000	0.50	20.0000		114	73 - 154			
n-Propylbenzene	22.0000	0.50	20.0000		110	77 - 145			
Naphthalene	19.1500	0.50	20.0000		95.8	55 - 137			
o-Xylene	41.1700	0.50	40.0000		103	79 - 135			
sec-Butylbenzene	22.4400	0.50	20.0000		112	73 - 157			
Styrene	21.0700	0.50	20.0000		105	78 - 125			
tert-Butylbenzene	22.2000	0.50	20.0000		111	78 - 149			
Tetrachloroethene	21.7100	0.50	20.0000		109	74 - 136			
Toluene	40.1500	0.50	40.0000		100	78 - 124			
trans-1,2-Dichloroethene	21.0500	0.50	20.0000		105	66 - 131			
Trichloroethene	20.5800	0.50	20.0000		103	78 - 128			
Trichlorofluoromethane	24.1800	0.50	20.0000		121	60 - 170			
Vinyl chloride	25.7400	0.50	20.0000		129	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	23.55		25.0000		94.2	51 - 157			
Surrogate: 4-Bromofluorobenzene	24.85		25.0000		99.4	61 - 123			
Surrogate: Dibromofluoromethane	23.98		25.0000		95.9	57 - 147			



Certificate of Analysis

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Report To : Steve Netto

Reported : 08/10/2016

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

Batch B6H0182 - MSVOA_LL_W (continued)

LCS (B6H0182-BS1) - Continued

Prepared: 8/5/2016 Analyzed: 8/5/2016

Surrogate: Toluene-d8 24.37 25.0000 97.5 61 - 119

LCS Dup (B6H0182-BSD1)

Prepared: 8/5/2016 Analyzed: 8/5/2016

1,1,1,2-Tetrachloroethane	22.8800	0.50	20.0000	114	76 - 132	7.29	20
1,1,1-Trichloroethane	23.5600	0.50	20.0000	118	72 - 144	5.94	20
1,1,2,2-Tetrachloroethane	21.1400	0.50	20.0000	106	70 - 120	15.2	20
1,1,2-Trichloroethane	20.4100	0.50	20.0000	102	75 - 120	11.8	20
1,1-Dichloroethane	21.0900	0.50	20.0000	105	65 - 127	4.86	20
1,1-Dichloroethene	22.9400	0.50	20.0000	115	63 - 142	3.68	20
1,1-Dichloropropene	22.6100	0.50	20.0000	113	78 - 137	0.710	20
1,2,3-Trichloropropane	19.9000	0.50	20.0000	99.5	73 - 118	16.0	20
1,2,3-Trichlorobenzene	21.7900	0.50	20.0000	109	53 - 164	11.6	20
1,2,4-Trichlorobenzene	22.1500	0.50	20.0000	111	58 - 144	7.59	20
1,2,4-Trimethylbenzene	22.6100	0.50	20.0000	113	75 - 140	5.64	20
1,2-Dibromo-3-chloropropane	19.4900	0.50	20.0000	97.4	61 - 131	15.3	20
1,2-Dibromoethane	19.8000	0.50	20.0000	99.0	74 - 125	11.3	20
1,2-Dichlorobenzene	20.8400	0.50	20.0000	104	78 - 122	6.90	20
1,2-Dichloroethane	20.1900	0.50	20.0000	101	70 - 126	8.63	20
1,2-Dichloropropane	20.3800	0.50	20.0000	102	69 - 120	3.44	20
1,3,5-Trimethylbenzene	22.7900	0.50	20.0000	114	73 - 145	4.62	20
1,3-Dichlorobenzene	21.2300	0.50	20.0000	106	76 - 126	7.12	20
1,3-Dichloropropane	21.0900	0.50	20.0000	105	76 - 117	9.64	20
1,4-Dichlorobenzene	21.0100	0.50	20.0000	105	77 - 120	5.38	20
2,2-Dichloropropane	23.3800	0.50	20.0000	117	47 - 169	2.73	20
2-Chlorotoluene	22.3400	0.50	20.0000	112	75 - 135	4.91	20
4-Chlorotoluene	22.1200	0.50	20.0000	111	70 - 133	6.01	20
4-Isopropyltoluene	23.5900	0.50	20.0000	118	72 - 153	4.07	20
Benzene	43.2200	0.50	40.0000	108	73 - 123	3.58	20
Bromobenzene	21.7000	0.50	20.0000	108	75 - 121	7.71	20
Bromodichloromethane	20.3000	0.50	20.0000	102	73 - 124	7.57	20
Bromoform	19.4000	0.50	20.0000	97.0	70 - 135	9.28	20
Bromomethane	30.1000	0.50	20.0000	150	10 - 166	0.695	20
Carbon tetrachloride	24.3400	0.50	20.0000	122	65 - 171	1.28	20
Chlorobenzene	21.1200	0.50	20.0000	106	80 - 121	5.95	20
Chloroethane	26.3300	0.50	20.0000	132	55 - 143	10.8	20
Chloroform	21.3600	0.50	20.0000	107	65 - 130	6.68	20
Chloromethane	25.9100	0.50	20.0000	130	21 - 141	1.40	20
cis-1,2-Dichloroethene	21.8400	0.50	20.0000	109	64 - 126	6.57	20
cis-1,3-Dichloropropene	22.0300	0.50	20.0000	110	70 - 131	7.10	20
Dibromochloromethane	21.8500	0.50	20.0000	109	74 - 125	7.35	20
Dibromomethane	20.1700	0.50	20.0000	101	74 - 116	8.10	20
Dichlorodifluoromethane	37.2000	0.50	20.0000	186	40 - 186	2.95	20



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

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

Batch B6H0182 - MSVOA_LL_W (continued)

LCS Dup (B6H0182-BS01) - Continued

Prepared: 8/5/2016 Analyzed: 8/5/2016

Ethylbenzene	42.3700	0.50	40.0000		106	77 - 130	4.71	20	
Hexachlorobutadiene	22.1200	0.50	20.0000		111	52 - 176	1.30	20	
Isopropylbenzene	24.7800	0.50	20.0000		124	77 - 144	4.41	20	
m,p-Xylene	45.3700	1.0	40.0000		113	84 - 136	5.50	20	
Methylene chloride	17.6500	1.0	20.0000		88.2	72 - 150	4.64	20	
n-Butylbenzene	23.5100	0.50	20.0000		118	73 - 154	3.07	20	
n-Propylbenzene	23.0100	0.50	20.0000		115	77 - 145	4.49	20	
Naphthalene	22.3100	0.50	20.0000		112	55 - 137	15.2	20	
o-Xylene	43.4800	0.50	40.0000		109	79 - 135	5.46	20	
sec-Butylbenzene	23.2200	0.50	20.0000		116	73 - 157	3.42	20	
Styrene	21.9100	0.50	20.0000		110	78 - 125	3.91	20	
tert-Butylbenzene	23.0100	0.50	20.0000		115	78 - 149	3.58	20	
Tetrachloroethene	22.2800	0.50	20.0000		111	74 - 136	2.59	20	
Toluene	42.2800	0.50	40.0000		106	78 - 124	5.17	20	
trans-1,2-Dichloroethene	21.7600	0.50	20.0000		109	66 - 131	3.32	20	
Trichloroethene	20.8600	0.50	20.0000		104	78 - 128	1.35	20	
Trichlorofluoromethane	24.6900	0.50	20.0000		123	60 - 170	2.09	20	
Vinyl chloride	27.1000	0.50	20.0000		136	55 - 148	5.15	20	
Surrogate: 1,2-Dichloroethane-d4	24.12		25.0000		96.5	51 - 157			
Surrogate: 4-Bromofluorobenzene	24.69		25.0000		98.8	61 - 123			
Surrogate: Dibromofluoromethane	24.64		25.0000		98.6	57 - 147			
Surrogate: Toluene-d8	24.43		25.0000		97.7	61 - 119			



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San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

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

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

Batch B6H0172 - MSSEMI_W

Blank (B6H0172-BLK1)

Prepared: 8/5/2016 Analyzed: 8/8/2016

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	58.14		100.000		58.1	42 - 106			
Surrogate: 2-Fluorobiphenyl	73.29		100.000		73.3	55 - 117			
Surrogate: 4-Terphenyl-d14	104.5		100.000		104	52 - 142			
Surrogate: Nitrobenzene-d5	78.06		100.000		78.1	43 - 116			

LCS (B6H0172-BS1)

Prepared: 8/5/2016 Analyzed: 8/8/2016

1,4-Dioxane	104.960	2.0	100.000		105	62 - 127			
Surrogate: 1,2-Dichlorobenzene-d4	60.66		100.000		60.7	42 - 106			
Surrogate: 2-Fluorobiphenyl	79.25		100.000		79.2	55 - 117			
Surrogate: 4-Terphenyl-d14	91.75		100.000		91.8	52 - 142			
Surrogate: Nitrobenzene-d5	83.30		100.000		83.3	43 - 116			

Matrix Spike (B6H0172-MS1)

Source: 1602700-03

Prepared: 8/5/2016 Analyzed: 8/8/2016

1,4-Dioxane	199.740	2.0	100.000	90.2800	109	62 - 127			
Surrogate: 1,2-Dichlorobenzene-d4	63.41		100.000		63.4	42 - 106			
Surrogate: 2-Fluorobiphenyl	79.90		100.000		79.9	55 - 117			
Surrogate: 4-Terphenyl-d14	93.06		100.000		93.1	52 - 142			
Surrogate: Nitrobenzene-d5	83.86		100.000		83.9	43 - 116			

Matrix Spike Dup (B6H0172-MSD1)

Source: 1602700-03

Prepared: 8/5/2016 Analyzed: 8/8/2016

1,4-Dioxane	211.140	2.0	100.000	90.2800	121	62 - 127	5.55	20	
Surrogate: 1,2-Dichlorobenzene-d4	59.09		100.000		59.1	42 - 106			
Surrogate: 2-Fluorobiphenyl	76.07		100.000		76.1	55 - 117			
Surrogate: 4-Terphenyl-d14	93.39		100.000		93.4	52 - 142			
Surrogate: Nitrobenzene-d5	81.62		100.000		81.6	43 - 116			



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San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

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 Limit	Notes

Batch B6H0136 - MSSEMI_ISOTOPEDILN_W

Blank (B6H0136-BLK1)

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

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.7589		1.00000		75.9	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.6840		1.00000		68.4	28 - 122			
Surrogate: 4-Terphenyl-d14	0.8074		1.00000		80.7	43 - 131			
Surrogate: Nitrobenzene-d5	0.7277		1.00000		72.8	20 - 119			

LCS (B6H0136-BS1)

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

1,4-Dioxane	1.18051	0.20	1.00000		118	49 - 169			
Surrogate: 1,2-Dichlorobenzene-d4	0.6853		1.00000		68.5	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.5679		1.00000		56.8	28 - 122			
Surrogate: 4-Terphenyl-d14	0.6846		1.00000		68.5	43 - 131			
Surrogate: Nitrobenzene-d5	0.7120		1.00000		71.2	20 - 119			

LCS Dup (B6H0136-BSD1)

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

1,4-Dioxane	0.991650	0.20	1.00000		99.2	49 - 169	17.4	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.7524		1.00000		75.2	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.6483		1.00000		64.8	28 - 122			
Surrogate: 4-Terphenyl-d14	0.7164		1.00000		71.6	43 - 131			
Surrogate: Nitrobenzene-d5	0.7638		1.00000		76.4	20 - 119			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Fullerton, 532.30

Report To : Steve Netto

Reported : 08/10/2016

Notes and Definitions

S5	Surrogate recovery was above laboratory acceptance limit. Sample reanalysis showed the same high recovery.
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.
L5	Laboratory Control Sample high biased. Sample result/s was non-detect (ND) for the target analyte; therefore reanalysis was not necessary.
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 Chris Ross

QA Manager Steve Netto

Phone 858.455.6500

Fax 858.455.6533

Sampled By: <u>ASF/10/10/10</u>				SAMPLE COLLECTION																Laboratory				
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 by EPA 8270 MOD	14-Dioxane by EPA 8270.5M	Standard TAT	MS	MSD	REMARKS	
1602200-1	TB-080116	08/01/10	1200	X	X					X		2					X							2275 WALNUT AVE
-2	MW-21		1230	X	X					X		3					X							SIGNAL HILL, CA
-3	EW-01		1245	X	X					X		9					X							90755
-4	MW-32A	08/02/10	0910	X	X					X		3					X							
-5	MW-32C		1105	X	X					X		3					X							24-HR-TAT
-6	MW-32B-15V		1200	X	X					X		3					X							
-7	MW-32B		1255	X	X					X		3					X							
-8	MW-33-15V		1347	X	X					X		3					X							
-9	MW-33		1440	X	X					X		3					X							
				X	X					X		1					X							
Total number of containers per analysis:																				Total No. of Containers: <u>0</u>				
Relinquished By: / Company:		Date / Time	Received By: / Company		Date / Time																			
<u>ASF/10/10/10</u>		<u>8/1/10 1705</u>	<u>Steve Netto</u>		<u>8/2/10 1705</u>																			
Relinquished By: / Company:		Date / Time	Received By: / Company		Date / Time																			
<u>Steve Netto</u>		<u>8/2/10 1758</u>	<u>EPD.WA</u>		<u>8/2/10 1758</u>																			

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

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.

4.0, 1.5 Temperature on receipt

Send Results to:

Steve Netto

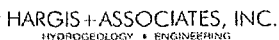
9171 Towne Centre Drive

Suite 375

San Diego, CA 92122

Ph: 858.455.5400

snetto@hargis.com



PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Chris Ross

QA Manager Steve Netto

Phone 858.455.6500

Fax 858.455.6533

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

Send Results to:

Steve Netto

9171 Towne Centre Drive

Suite 375

San Diego, CA 92122

Ph: 858.455.5400

snetto@hargis.com



August 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 : 1602748
Client Reference : Raytheon Main, 532.30

Enclosed are the results for sample(s) received on August 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,

A handwritten signature in black ink, appearing to read "E Rodriguez", is written over a light blue horizontal line.

Eddie Rodriguez
Laboratory Director

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



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Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-39	1602748-01	Groundwater	8/03/16 9:55	8/04/16 11:50
MW-3900	1602748-02	Groundwater	8/03/16 10:10	8/04/16 11:50
MW-36-1SV	1602748-03	Groundwater	8/03/16 11:05	8/04/16 11:50
MW-36	1602748-04	Groundwater	8/03/16 12:05	8/04/16 11:50
MW-3600	1602748-05	Groundwater	8/03/16 12:30	8/04/16 11:50
MW-37	1602748-06	Groundwater	8/03/16 13:45	8/04/16 11:50
MW-38	1602748-07	Groundwater	8/03/16 14:40	8/04/16 11:50
MW-41	1602748-08	Groundwater	8/03/16 15:31	8/04/16 11:50
TB-080316A	1602748-09	Lab prepared water	8/03/16 7:30	8/04/16 11:50
MW-28	1602748-10	Groundwater	8/03/16 8:40	8/04/16 11:50
MW-34A	1602748-11	Groundwater	8/03/16 9:46	8/04/16 11:50
MW-34B	1602748-12	Groundwater	8/03/16 10:13	8/04/16 11:50
MW-34C	1602748-13	Groundwater	8/03/16 11:32	8/04/16 11:50
MW-09	1602748-14	Groundwater	8/03/16 14:04	8/04/16 11:50
MW-31	1602748-15	Groundwater	8/03/16 15:17	8/04/16 11:50
MW-3100	1602748-16	Groundwater	8/03/16 16:19	8/04/16 11:50
MW-30B	1602748-17	Groundwater	8/03/16 16:11	8/04/16 11:50
MW-30A	1602748-18	Groundwater	8/03/16 16:33	8/04/16 11:50
MW-40	1602748-19	Groundwater	8/04/16 8:15	8/04/16 11:50
MW-4000	1602748-20	Groundwater	8/04/16 8:25	8/04/16 11:50



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Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-39

Lab ID: 1602748-01

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,1,1-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,1,2-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,1-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,1-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,1-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,2,3-Trichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,2-Dibromoethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,2-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,2-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,3-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,3-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
1,4-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
2,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
2-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
4-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
4-Isopropyltoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Benzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Bromobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Bromodichloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Bromoform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Bromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Carbon tetrachloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Chlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Chloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Chloroform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Chloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Dibromochloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	



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Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-39

Lab ID: 1602748-01

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Dichlorodifluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Ethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Hexachlorobutadiene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Isopropylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
m,p-Xylene	ND	1.0	1	B6H0199	08/08/2016	08/08/16 16:26	
Methylene chloride	ND	1.0	1	B6H0199	08/08/2016	08/08/16 16:26	
n-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
n-Propylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Naphthalene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
o-Xylene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
sec-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Styrene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
tert-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Tetrachloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Toluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Trichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Trichlorofluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Vinyl chloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:26	
Surrogate: 1,2-Dichloroethane-d4	101 %	51 - 157		B6H0199	08/08/2016	08/08/16 16:26	
Surrogate: 4-Bromofluorobenzene	102 %	61 - 123		B6H0199	08/08/2016	08/08/16 16:26	
Surrogate: Dibromofluoromethane	102 %	57 - 147		B6H0199	08/08/2016	08/08/16 16:26	
Surrogate: Toluene-d8	103 %	61 - 119		B6H0199	08/08/2016	08/08/16 16:26	



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Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-39

Lab ID: 1602748-01

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	ND	0.20	1	B6H0327	08/10/2016	08/11/16 09:49	
Surrogate: 1,2-Dichlorobenzene-d4	67.4 %	31 - 106		B6H0327	08/10/2016	08/11/16 09:49	
Surrogate: 2-Fluorobiphenyl	73.1 %	28 - 122		B6H0327	08/10/2016	08/11/16 09:49	
Surrogate: 4-Terphenyl-d14	76.3 %	43 - 131		B6H0327	08/10/2016	08/11/16 09:49	
Surrogate: Nitrobenzene-d5	80.6 %	20 - 119		B6H0327	08/10/2016	08/11/16 09:49	



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Project Number : Raytheon Main, 532.30

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Reported : 08/12/2016

Client Sample ID MW-3900

Lab ID: 1602748-02

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,1,1-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,1,2-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,1-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,1-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,1-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,2,3-Trichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,2-Dibromoethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,2-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,2-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,3-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,3-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
1,4-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
2,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
2-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
4-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
4-Isopropyltoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Benzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Bromobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Bromodichloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Bromoform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Bromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Carbon tetrachloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Chlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Chloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Chloroform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Chloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Dibromochloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	



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Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-3900

Lab ID: 1602748-02

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Dichlorodifluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Ethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Hexachlorobutadiene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Isopropylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
m,p-Xylene	ND	1.0	1	B6H0199	08/08/2016	08/08/16 16:49	
Methylene chloride	ND	1.0	1	B6H0199	08/08/2016	08/08/16 16:49	
n-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
n-Propylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Naphthalene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
o-Xylene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
sec-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Styrene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
tert-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Tetrachloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Toluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Trichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Trichlorofluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Vinyl chloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 16:49	
Surrogate: 1,2-Dichloroethane-d4	101 %	51 - 157		B6H0199	08/08/2016	08/08/16 16:49	
Surrogate: 4-Bromofluorobenzene	99.2 %	61 - 123		B6H0199	08/08/2016	08/08/16 16:49	
Surrogate: Dibromofluoromethane	101 %	57 - 147		B6H0199	08/08/2016	08/08/16 16:49	
Surrogate: Toluene-d8	101 %	61 - 119		B6H0199	08/08/2016	08/08/16 16:49	



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 : 08/12/2016

Client Sample ID MW-3900

Lab ID: 1602748-02

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	B6H0327	08/10/2016	08/11/16 10:17	
Surrogate: 1,2-Dichlorobenzene-d4	63.4 %	31 - 106		B6H0327	08/10/2016	08/11/16 10:17	
Surrogate: 2-Fluorobiphenyl	68.8 %	28 - 122		B6H0327	08/10/2016	08/11/16 10:17	
Surrogate: 4-Terphenyl-d14	80.4 %	43 - 131		B6H0327	08/10/2016	08/11/16 10:17	
Surrogate: Nitrobenzene-d5	75.5 %	20 - 119		B6H0327	08/10/2016	08/11/16 10:17	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-36-1SV

Lab ID: 1602748-03

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,1,1-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,1,2-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,1-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,1-Dichloroethene	27	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,1-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,2,3-Trichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,2-Dibromoethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,2-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,2-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,3-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,3-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
1,4-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
2,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
2-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
4-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
4-Isopropyltoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Benzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Bromobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Bromodichloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Bromoform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Bromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Carbon tetrachloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Chlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Chloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Chloroform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Chloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Dibromochloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	



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 : 08/12/2016

Client Sample ID MW-36-1SV

Lab ID: 1602748-03

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Dichlorodifluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Ethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Hexachlorobutadiene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Isopropylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
m,p-Xylene	ND	1.0	1	B6H0199	08/08/2016	08/08/16 17:35	
Methylene chloride	ND	1.0	1	B6H0199	08/08/2016	08/08/16 17:35	
n-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
n-Propylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Naphthalene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
o-Xylene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
sec-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Styrene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
tert-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Tetrachloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Toluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Trichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Trichlorofluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
Vinyl chloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:35	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97.9 %</i>	<i>51 - 157</i>		B6H0199	08/08/2016	<i>08/08/16 17:35</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.9 %</i>	<i>61 - 123</i>		B6H0199	08/08/2016	<i>08/08/16 17:35</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>97.4 %</i>	<i>57 - 147</i>		B6H0199	08/08/2016	<i>08/08/16 17:35</i>	
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>	<i>61 - 119</i>		B6H0199	08/08/2016	<i>08/08/16 17:35</i>	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-36-1SV

Lab ID: 1602748-03

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	ND	2.0	1	B6H0292	08/09/2016	08/11/16 12:39	
Surrogate: 1,2-Dichlorobenzene-d4	50.2 %	42 - 106		B6H0292	08/09/2016	08/11/16 12:39	
Surrogate: 2-Fluorobiphenyl	62.5 %	55 - 117		B6H0292	08/09/2016	08/11/16 12:39	
Surrogate: 4-Terphenyl-d14	102 %	52 - 142		B6H0292	08/09/2016	08/11/16 12:39	
Surrogate: Nitrobenzene-d5	57.5 %	43 - 116		B6H0292	08/09/2016	08/11/16 12:39	



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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 : 08/12/2016

Client Sample ID MW-36

Lab ID: 1602748-04

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,1,1-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,1,2-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,1-Dichloroethane	0.76	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,1-Dichloroethene	66	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,1-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,2,3-Trichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,2-Dibromoethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,2-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,2-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,3-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,3-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
1,4-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
2,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
2-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
4-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
4-Isopropyltoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Benzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Bromobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Bromodichloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Bromoform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Bromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Carbon tetrachloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Chlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Chloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Chloroform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Chloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Dibromochloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-36

Lab ID: 1602748-04

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Dichlorodifluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Ethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Hexachlorobutadiene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Isopropylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
m,p-Xylene	ND	1.0	1	B6H0260	08/09/2016	08/09/16 14:32	
Methylene chloride	ND	1.0	1	B6H0260	08/09/2016	08/09/16 14:32	
n-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
n-Propylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Naphthalene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
o-Xylene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
sec-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Styrene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
tert-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Tetrachloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Toluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Trichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Trichlorofluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Vinyl chloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:32	
Surrogate: 1,2-Dichloroethane-d4	102 %	51 - 157		B6H0260	08/09/2016	08/09/16 14:32	
Surrogate: 4-Bromofluorobenzene	101 %	61 - 123		B6H0260	08/09/2016	08/09/16 14:32	
Surrogate: Dibromofluoromethane	101 %	57 - 147		B6H0260	08/09/2016	08/09/16 14:32	
Surrogate: Toluene-d8	104 %	61 - 119		B6H0260	08/09/2016	08/09/16 14:32	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-36

Lab ID: 1602748-04

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	2.6	2.0	1	B6H0292	08/09/2016	08/11/16 13:07	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>60.5 %</i>	<i>42 - 106</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 13:07</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>71.5 %</i>	<i>55 - 117</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 13:07</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>102 %</i>	<i>52 - 142</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 13:07</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>69.0 %</i>	<i>43 - 116</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 13:07</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-3600

Lab ID: 1602748-05

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,1,1-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,1,2-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,1-Dichloroethane	0.83	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,1-Dichloroethene	65	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,1-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,2,3-Trichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,2-Dibromoethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,2-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,2-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,3-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,3-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
1,4-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
2,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
2-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
4-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
4-Isopropyltoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Benzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Bromobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Bromodichloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Bromoform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Bromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Carbon tetrachloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Chlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Chloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Chloroform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Chloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Dibromochloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-3600

Lab ID: 1602748-05

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Dichlorodifluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Ethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Hexachlorobutadiene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Isopropylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
m,p-Xylene	ND	1.0	1	B6H0260	08/09/2016	08/09/16 14:55	
Methylene chloride	ND	1.0	1	B6H0260	08/09/2016	08/09/16 14:55	
n-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
n-Propylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Naphthalene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
o-Xylene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
sec-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Styrene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
tert-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Tetrachloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Toluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Trichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Trichlorofluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Vinyl chloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:55	
Surrogate: 1,2-Dichloroethane-d4	102 %	51 - 157		B6H0260	08/09/2016	08/09/16 14:55	
Surrogate: 4-Bromofluorobenzene	101 %	61 - 123		B6H0260	08/09/2016	08/09/16 14:55	
Surrogate: Dibromofluoromethane	102 %	57 - 147		B6H0260	08/09/2016	08/09/16 14:55	
Surrogate: Toluene-d8	102 %	61 - 119		B6H0260	08/09/2016	08/09/16 14:55	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-3600

Lab ID: 1602748-05

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	2.4	2.0	1	B6H0292	08/09/2016	08/11/16 13:34	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>59.8 %</i>	<i>42 - 106</i>		B6H0292	08/09/2016	<i>08/11/16 13:34</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>70.1 %</i>	<i>55 - 117</i>		B6H0292	08/09/2016	<i>08/11/16 13:34</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>97.2 %</i>	<i>52 - 142</i>		B6H0292	08/09/2016	<i>08/11/16 13:34</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>65.9 %</i>	<i>43 - 116</i>		B6H0292	08/09/2016	<i>08/11/16 13:34</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 : 08/12/2016

Client Sample ID MW-37

Lab ID: 1602748-06

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,1,1-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,1,2-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,1-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,1-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,1-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,2,3-Trichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,2-Dibromoethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,2-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,2-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,3-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,3-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
1,4-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
2,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
2-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
4-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
4-Isopropyltoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Benzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Bromobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Bromodichloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Bromoform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Bromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Carbon tetrachloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Chlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Chloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Chloroform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Chloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Dibromochloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-37

Lab ID: 1602748-06

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Dichlorodifluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Ethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Hexachlorobutadiene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Isopropylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
m,p-Xylene	ND	1.0	1	B6H0199	08/08/2016	08/08/16 13:44	
Methylene chloride	ND	1.0	1	B6H0199	08/08/2016	08/08/16 13:44	
n-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
n-Propylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Naphthalene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
o-Xylene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
sec-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Styrene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
tert-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Tetrachloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Toluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Trichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Trichlorofluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Vinyl chloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:44	
Surrogate: 1,2-Dichloroethane-d4	98.8 %	51 - 157		B6H0199	08/08/2016	08/08/16 13:44	
Surrogate: 4-Bromofluorobenzene	99.8 %	61 - 123		B6H0199	08/08/2016	08/08/16 13:44	
Surrogate: Dibromofluoromethane	98.2 %	57 - 147		B6H0199	08/08/2016	08/08/16 13:44	
Surrogate: Toluene-d8	99.6 %	61 - 119		B6H0199	08/08/2016	08/08/16 13:44	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-37

Lab ID: 1602748-06

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	ND	0.20	1	B6H0327	08/10/2016	08/11/16 10:44	
Surrogate: 1,2-Dichlorobenzene-d4	66.0 %	31 - 106		B6H0327	08/10/2016	08/11/16 10:44	
Surrogate: 2-Fluorobiphenyl	72.7 %	28 - 122		B6H0327	08/10/2016	08/11/16 10:44	
Surrogate: 4-Terphenyl-d14	77.3 %	43 - 131		B6H0327	08/10/2016	08/11/16 10:44	
Surrogate: Nitrobenzene-d5	78.7 %	20 - 119		B6H0327	08/10/2016	08/11/16 10:44	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-38

Lab ID: 1602748-07

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,1,1-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,1,2-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,1-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,1-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,1-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,2,3-Trichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,2-Dibromoethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,2-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,2-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,3-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,3-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
1,4-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
2,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
2-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
4-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
4-Isopropyltoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Benzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Bromobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Bromodichloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Bromoform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Bromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Carbon tetrachloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Chlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Chloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Chloroform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Chloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Dibromochloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	



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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 : 08/12/2016

Client Sample ID MW-38

Lab ID: 1602748-07

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Dichlorodifluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Ethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Hexachlorobutadiene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Isopropylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
m,p-Xylene	ND	1.0	1	B6H0199	08/08/2016	08/08/16 17:12	
Methylene chloride	ND	1.0	1	B6H0199	08/08/2016	08/08/16 17:12	
n-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
n-Propylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Naphthalene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
o-Xylene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
sec-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Styrene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
tert-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Tetrachloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Toluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Trichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Trichlorofluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Vinyl chloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 17:12	
Surrogate: 1,2-Dichloroethane-d4	98.1 %	51 - 157		B6H0199	08/08/2016	08/08/16 17:12	
Surrogate: 4-Bromofluorobenzene	98.3 %	61 - 123		B6H0199	08/08/2016	08/08/16 17:12	
Surrogate: Dibromofluoromethane	100 %	57 - 147		B6H0199	08/08/2016	08/08/16 17:12	
Surrogate: Toluene-d8	103 %	61 - 119		B6H0199	08/08/2016	08/08/16 17:12	



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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 : 08/12/2016

Client Sample ID MW-38

Lab ID: 1602748-07

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	ND	0.20	1	B6H0327	08/10/2016	08/11/16 11:12	
Surrogate: 1,2-Dichlorobenzene-d4	62.7 %	31 - 106		B6H0327	08/10/2016	08/11/16 11:12	
Surrogate: 2-Fluorobiphenyl	65.0 %	28 - 122		B6H0327	08/10/2016	08/11/16 11:12	
Surrogate: 4-Terphenyl-d14	69.4 %	43 - 131		B6H0327	08/10/2016	08/11/16 11:12	
Surrogate: Nitrobenzene-d5	73.6 %	20 - 119		B6H0327	08/10/2016	08/11/16 11:12	



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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 : 08/12/2016

Client Sample ID MW-41

Lab ID: 1602748-08

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,1,1-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,1,2-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,1-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,1-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,1-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,2,3-Trichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,2-Dibromoethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,2-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,2-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,3-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,3-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
1,4-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
2,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
2-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
4-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
4-Isopropyltoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Benzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Bromobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Bromodichloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Bromoform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Bromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Carbon tetrachloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Chlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Chloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Chloroform	0.60	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Chloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Dibromochloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-41

Lab ID: 1602748-08

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Dichlorodifluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Ethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Hexachlorobutadiene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Isopropylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
m,p-Xylene	ND	1.0	1	B6H0260	08/09/2016	08/09/16 14:09	
Methylene chloride	ND	1.0	1	B6H0260	08/09/2016	08/09/16 14:09	
n-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
n-Propylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Naphthalene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
o-Xylene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
sec-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Styrene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
tert-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Tetrachloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Toluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Trichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Trichlorofluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Vinyl chloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 14:09	
Surrogate: 1,2-Dichloroethane-d4	99.6 %	51 - 157		B6H0260	08/09/2016	08/09/16 14:09	
Surrogate: 4-Bromofluorobenzene	101 %	61 - 123		B6H0260	08/09/2016	08/09/16 14:09	
Surrogate: Dibromofluoromethane	101 %	57 - 147		B6H0260	08/09/2016	08/09/16 14:09	
Surrogate: Toluene-d8	104 %	61 - 119		B6H0260	08/09/2016	08/09/16 14:09	



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Project Number : Raytheon Main, 532.30

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Client Sample ID MW-41

Lab ID: 1602748-08

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	B6H0327	08/10/2016	08/11/16 11:40	
Surrogate: 1,2-Dichlorobenzene-d4	72.1 %	31 - 106		B6H0327	08/10/2016	08/11/16 11:40	
Surrogate: 2-Fluorobiphenyl	77.1 %	28 - 122		B6H0327	08/10/2016	08/11/16 11:40	
Surrogate: 4-Terphenyl-d14	76.4 %	43 - 131		B6H0327	08/10/2016	08/11/16 11:40	
Surrogate: Nitrobenzene-d5	84.2 %	20 - 119		B6H0327	08/10/2016	08/11/16 11:40	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID TB-080316A

Lab ID: 1602748-09

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,1,1-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,1,2-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,1-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,1-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,1-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,2,3-Trichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,2-Dibromoethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,2-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,2-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,3-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,3-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
1,4-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
2,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
2-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
4-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
4-Isopropyltoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Benzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Bromobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Bromodichloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Bromoform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Bromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Carbon tetrachloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Chlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Chloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Chloroform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Chloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Dibromochloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	



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 : 08/12/2016

Client Sample ID TB-080316A

Lab ID: 1602748-09

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Dichlorodifluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Ethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Hexachlorobutadiene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Isopropylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
m,p-Xylene	ND	1.0	1	B6H0199	08/08/2016	08/08/16 11:48	
Methylene chloride	2.1	1.0	1	B6H0199	08/08/2016	08/08/16 11:48	
n-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
n-Propylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Naphthalene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
o-Xylene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
sec-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Styrene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
tert-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Tetrachloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Toluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Trichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Trichlorofluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
Vinyl chloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:48	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>96.6 %</i>	<i>51 - 157</i>		B6H0199	08/08/2016	<i>08/08/16 11:48</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>100 %</i>	<i>61 - 123</i>		B6H0199	08/08/2016	<i>08/08/16 11:48</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.2 %</i>	<i>57 - 147</i>		B6H0199	08/08/2016	<i>08/08/16 11:48</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>61 - 119</i>		B6H0199	08/08/2016	<i>08/08/16 11:48</i>	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-28

Lab ID: 1602748-10

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,1,1-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,1,2-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,1-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,1-Dichloroethene	0.88	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,1-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,2,3-Trichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,2-Dibromoethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,2-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,2-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,3-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,3-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
1,4-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
2,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
2-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
4-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
4-Isopropyltoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Benzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Bromobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Bromodichloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Bromoform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Bromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Carbon tetrachloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Chlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Chloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Chloroform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Chloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Dibromochloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	



Certificate of Analysis

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Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-28

Lab ID: 1602748-10

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Dichlorodifluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Ethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Hexachlorobutadiene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Isopropylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
m,p-Xylene	ND	1.0	1	B6H0260	08/09/2016	08/09/16 11:52	
Methylene chloride	ND	1.0	1	B6H0260	08/09/2016	08/09/16 11:52	
n-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
n-Propylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Naphthalene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
o-Xylene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
sec-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Styrene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
tert-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Tetrachloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Toluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Trichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Trichlorofluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Vinyl chloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:52	
Surrogate: 1,2-Dichloroethane-d4	101 %	51 - 157		B6H0260	08/09/2016	08/09/16 11:52	
Surrogate: 4-Bromofluorobenzene	101 %	61 - 123		B6H0260	08/09/2016	08/09/16 11:52	
Surrogate: Dibromofluoromethane	101 %	57 - 147		B6H0260	08/09/2016	08/09/16 11:52	
Surrogate: Toluene-d8	103 %	61 - 119		B6H0260	08/09/2016	08/09/16 11:52	



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 : 08/12/2016

Client Sample ID MW-28

Lab ID: 1602748-10

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	B6H0327	08/10/2016	08/12/16 10:16	
Surrogate: 1,2-Dichlorobenzene-d4	67.7 %	31 - 106		B6H0327	08/10/2016	08/12/16 10:16	
Surrogate: 2-Fluorobiphenyl	67.6 %	28 - 122		B6H0327	08/10/2016	08/12/16 10:16	
Surrogate: 4-Terphenyl-d14	72.0 %	43 - 131		B6H0327	08/10/2016	08/12/16 10:16	
Surrogate: Nitrobenzene-d5	96.1 %	20 - 119		B6H0327	08/10/2016	08/12/16 10:16	



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 : 08/12/2016

Client Sample ID MW-34A

Lab ID: 1602748-11

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,1,1-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,1,2-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,1-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,1-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,1-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,2,3-Trichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,2-Dibromoethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,2-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,2-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,3-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,3-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
1,4-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
2,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
2-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
4-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
4-Isopropyltoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Benzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Bromobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Bromodichloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Bromoform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Bromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Carbon tetrachloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Chlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Chloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Chloroform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Chloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Dibromochloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-34A

Lab ID: 1602748-11

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Dichlorodifluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Ethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Hexachlorobutadiene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Isopropylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
m,p-Xylene	ND	1.0	1	B6H0260	08/09/2016	08/09/16 12:15	
Methylene chloride	ND	1.0	1	B6H0260	08/09/2016	08/09/16 12:15	
n-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
n-Propylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Naphthalene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
o-Xylene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
sec-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Styrene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
tert-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Tetrachloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Toluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Trichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Trichlorofluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Vinyl chloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:15	
Surrogate: 1,2-Dichloroethane-d4	97.6 %	51 - 157		B6H0260	08/09/2016	08/09/16 12:15	
Surrogate: 4-Bromofluorobenzene	99.2 %	61 - 123		B6H0260	08/09/2016	08/09/16 12:15	
Surrogate: Dibromofluoromethane	103 %	57 - 147		B6H0260	08/09/2016	08/09/16 12:15	
Surrogate: Toluene-d8	104 %	61 - 119		B6H0260	08/09/2016	08/09/16 12:15	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-34A

Lab ID: 1602748-11

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	B6H0327	08/10/2016	08/12/16 10:43	
Surrogate: 1,2-Dichlorobenzene-d4	73.9 %	31 - 106		B6H0327	08/10/2016	08/12/16 10:43	
Surrogate: 2-Fluorobiphenyl	78.1 %	28 - 122		B6H0327	08/10/2016	08/12/16 10:43	
Surrogate: 4-Terphenyl-d14	82.3 %	43 - 131		B6H0327	08/10/2016	08/12/16 10:43	
Surrogate: Nitrobenzene-d5	105 %	20 - 119		B6H0327	08/10/2016	08/12/16 10:43	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-34B

Lab ID: 1602748-12

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,1,1-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,1,2-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,1-Dichloroethane	0.96	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,1-Dichloroethene	73	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,1-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,2,3-Trichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,2-Dibromoethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,2-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,2-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,3-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,3-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
1,4-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
2,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
2-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
4-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
4-Isopropyltoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Benzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Bromobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Bromodichloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Bromoform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Bromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Carbon tetrachloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Chlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Chloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Chloroform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Chloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Dibromochloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-34B

Lab ID: 1602748-12

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Dichlorodifluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Ethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Hexachlorobutadiene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Isopropylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
m,p-Xylene	ND	1.0	1	B6H0260	08/09/2016	08/09/16 15:18	
Methylene chloride	ND	1.0	1	B6H0260	08/09/2016	08/09/16 15:18	
n-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
n-Propylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Naphthalene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
o-Xylene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
sec-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Styrene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
tert-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Tetrachloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Toluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Trichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Trichlorofluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Vinyl chloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:18	
Surrogate: 1,2-Dichloroethane-d4	99.5 %	51 - 157		B6H0260	08/09/2016	08/09/16 15:18	
Surrogate: 4-Bromofluorobenzene	98.6 %	61 - 123		B6H0260	08/09/2016	08/09/16 15:18	
Surrogate: Dibromofluoromethane	99.4 %	57 - 147		B6H0260	08/09/2016	08/09/16 15:18	
Surrogate: Toluene-d8	101 %	61 - 119		B6H0260	08/09/2016	08/09/16 15:18	



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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 : 08/12/2016

Client Sample ID MW-34B

Lab ID: 1602748-12

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	12	2.0	1	B6H0292	08/09/2016	08/11/16 14:01	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>58.0 %</i>	<i>42 - 106</i>		B6H0292	08/09/2016	<i>08/11/16 14:01</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>68.7 %</i>	<i>55 - 117</i>		B6H0292	08/09/2016	<i>08/11/16 14:01</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>88.0 %</i>	<i>52 - 142</i>		B6H0292	08/09/2016	<i>08/11/16 14:01</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>64.6 %</i>	<i>43 - 116</i>		B6H0292	08/09/2016	<i>08/11/16 14:01</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-34C

Lab ID: 1602748-13

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,1,1-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,1,2-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,1-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,1-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,1-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,2,3-Trichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,2-Dibromoethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,2-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,2-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,3-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,3-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
1,4-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
2,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
2-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
4-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
4-Isopropyltoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Benzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Bromobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Bromodichloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Bromoform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Bromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Carbon tetrachloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Chlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Chloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Chloroform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Chloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Dibromochloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	



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 : 08/12/2016

Client Sample ID MW-34C

Lab ID: 1602748-13

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Dichlorodifluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Ethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Hexachlorobutadiene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Isopropylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
m,p-Xylene	ND	1.0	1	B6H0260	08/09/2016	08/09/16 12:37	
Methylene chloride	ND	1.0	1	B6H0260	08/09/2016	08/09/16 12:37	
n-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
n-Propylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Naphthalene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
o-Xylene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
sec-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Styrene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
tert-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Tetrachloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Toluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Trichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Trichlorofluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
Vinyl chloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 12:37	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>	<i>51 - 157</i>		B6H0260	08/09/2016	<i>08/09/16 12:37</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>101 %</i>	<i>61 - 123</i>		B6H0260	08/09/2016	<i>08/09/16 12:37</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>103 %</i>	<i>57 - 147</i>		B6H0260	08/09/2016	<i>08/09/16 12:37</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>61 - 119</i>		B6H0260	08/09/2016	<i>08/09/16 12:37</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 : 08/12/2016

Client Sample ID MW-34C

Lab ID: 1602748-13

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	ND	0.20	1	B6H0327	08/10/2016	08/12/16 11:11	
Surrogate: 1,2-Dichlorobenzene-d4	70.4 %	31 - 106		B6H0327	08/10/2016	08/12/16 11:11	
Surrogate: 2-Fluorobiphenyl	75.2 %	28 - 122		B6H0327	08/10/2016	08/12/16 11:11	
Surrogate: 4-Terphenyl-d14	75.2 %	43 - 131		B6H0327	08/10/2016	08/12/16 11:11	
Surrogate: Nitrobenzene-d5	102 %	20 - 119		B6H0327	08/10/2016	08/12/16 11:11	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-09

Lab ID: 1602748-14

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,1,1-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,1,2-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,1-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,1-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,1-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,2,3-Trichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,2-Dibromoethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,2-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,2-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,3-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,3-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
1,4-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
2,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
2-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
4-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
4-Isopropyltoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Benzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Bromobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Bromodichloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Bromoform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Bromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Carbon tetrachloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Chlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Chloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Chloroform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Chloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Dibromochloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-09

Lab ID: 1602748-14

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Dichlorodifluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Ethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Hexachlorobutadiene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Isopropylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
m,p-Xylene	ND	1.0	1	B6H0260	08/09/2016	08/09/16 13:00	
Methylene chloride	ND	1.0	1	B6H0260	08/09/2016	08/09/16 13:00	
n-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
n-Propylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Naphthalene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
o-Xylene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
sec-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Styrene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
tert-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Tetrachloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Toluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Trichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Trichlorofluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Vinyl chloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:00	
Surrogate: 1,2-Dichloroethane-d4	101 %	51 - 157		B6H0260	08/09/2016	08/09/16 13:00	
Surrogate: 4-Bromofluorobenzene	95.3 %	61 - 123		B6H0260	08/09/2016	08/09/16 13:00	
Surrogate: Dibromofluoromethane	100 %	57 - 147		B6H0260	08/09/2016	08/09/16 13:00	
Surrogate: Toluene-d8	100 %	61 - 119		B6H0260	08/09/2016	08/09/16 13:00	



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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-09

Lab ID: 1602748-14

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	B6H0327	08/10/2016	08/12/16 11:39	
Surrogate: 1,2-Dichlorobenzene-d4	75.5 %	31 - 106		B6H0327	08/10/2016	08/12/16 11:39	
Surrogate: 2-Fluorobiphenyl	79.2 %	28 - 122		B6H0327	08/10/2016	08/12/16 11:39	
Surrogate: 4-Terphenyl-d14	76.3 %	43 - 131		B6H0327	08/10/2016	08/12/16 11:39	
Surrogate: Nitrobenzene-d5	104 %	20 - 119		B6H0327	08/10/2016	08/12/16 11:39	



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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 : 08/12/2016

Client Sample ID MW-31

Lab ID: 1602748-15

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,1,1-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,1,2-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,1-Dichloroethane	1.8	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,1-Dichloroethene	170	5.0	10	B6H0260	08/09/2016	08/09/16 16:35	
1,1-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,2,3-Trichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,2-Dibromoethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,2-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,2-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,3-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,3-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
1,4-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
2,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
2-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
4-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
4-Isopropyltoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Benzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Bromobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Bromodichloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Bromoform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Bromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Carbon tetrachloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Chlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Chloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Chloroform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Chloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Dibromochloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	



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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 : 08/12/2016

Client Sample ID MW-31

Lab ID: 1602748-15

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Dichlorodifluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Ethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Hexachlorobutadiene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Isopropylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
m,p-Xylene	ND	1.0	1	B6H0260	08/09/2016	08/09/16 15:41	
Methylene chloride	ND	1.0	1	B6H0260	08/09/2016	08/09/16 15:41	
n-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
n-Propylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Naphthalene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
o-Xylene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
sec-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Styrene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
tert-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Tetrachloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Toluene	0.75	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Trichloroethene	7.2	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Trichlorofluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	
Vinyl chloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 15:41	

Surrogate: 1,2-Dichloroethane-d4	97.6 %	51 - 157	B6H0260	08/09/2016	08/09/16 15:41
Surrogate: 1,2-Dichloroethane-d4	97.1 %	51 - 157	B6H0260	08/09/2016	08/09/16 16:35
Surrogate: 4-Bromofluorobenzene	97.6 %	61 - 123	B6H0260	08/09/2016	08/09/16 15:41
Surrogate: 4-Bromofluorobenzene	101 %	61 - 123	B6H0260	08/09/2016	08/09/16 16:35
Surrogate: Dibromofluoromethane	99.9 %	57 - 147	B6H0260	08/09/2016	08/09/16 15:41
Surrogate: Dibromofluoromethane	101 %	57 - 147	B6H0260	08/09/2016	08/09/16 16:35
Surrogate: Toluene-d8	100 %	61 - 119	B6H0260	08/09/2016	08/09/16 15:41
Surrogate: Toluene-d8	102 %	61 - 119	B6H0260	08/09/2016	08/09/16 16:35



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 : 08/12/2016

Client Sample ID MW-31

Lab ID: 1602748-15

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	4.7	2.0	1	B6H0292	08/09/2016	08/11/16 14:29	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>53.6 %</i>	<i>42 - 106</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 14:29</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>66.2 %</i>	<i>55 - 117</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 14:29</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>96.2 %</i>	<i>52 - 142</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 14:29</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>62.4 %</i>	<i>43 - 116</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 14:29</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 : 08/12/2016

Client Sample ID MW-3100

Lab ID: 1602748-16

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,1,1-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,1,2-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,1-Dichloroethane	1.8	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,1-Dichloroethene	160	5.0	10	B6H0260	08/09/2016	08/09/16 17:09	
1,1-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,2,3-Trichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,2-Dibromoethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,2-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,2-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,3-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,3-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
1,4-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
2,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
2-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
4-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
4-Isopropyltoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Benzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Bromobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Bromodichloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Bromoform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Bromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Carbon tetrachloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Chlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Chloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Chloroform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Chloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Dibromochloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	



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 : 08/12/2016

Client Sample ID MW-3100

Lab ID: 1602748-16

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Dichlorodifluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Ethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Hexachlorobutadiene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Isopropylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
m,p-Xylene	ND	1.0	1	B6H0260	08/09/2016	08/09/16 16:04	
Methylene chloride	ND	1.0	1	B6H0260	08/09/2016	08/09/16 16:04	
n-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
n-Propylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Naphthalene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
o-Xylene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
sec-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Styrene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
tert-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Tetrachloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Toluene	0.57	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Trichloroethene	7.2	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Trichlorofluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
Vinyl chloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 16:04	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>	<i>51 - 157</i>		B6H0260	08/09/2016	<i>08/09/16 16:04</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.4 %</i>	<i>51 - 157</i>		B6H0260	08/09/2016	<i>08/09/16 17:09</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>104 %</i>	<i>61 - 123</i>		B6H0260	08/09/2016	<i>08/09/16 17:09</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>103 %</i>	<i>61 - 123</i>		B6H0260	08/09/2016	<i>08/09/16 16:04</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>	<i>57 - 147</i>		B6H0260	08/09/2016	<i>08/09/16 17:09</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>	<i>57 - 147</i>		B6H0260	08/09/2016	<i>08/09/16 16:04</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>61 - 119</i>		B6H0260	08/09/2016	<i>08/09/16 17:09</i>	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>61 - 119</i>		B6H0260	08/09/2016	<i>08/09/16 16:04</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 : 08/12/2016

Client Sample ID MW-3100

Lab ID: 1602748-16

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	3.7	2.0	1	B6H0292	08/09/2016	08/11/16 14:57	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>54.4 %</i>	<i>42 - 106</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 14:57</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>68.5 %</i>	<i>55 - 117</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 14:57</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>89.4 %</i>	<i>52 - 142</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 14:57</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>63.5 %</i>	<i>43 - 116</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 14:57</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 : 08/12/2016

Client Sample ID MW-30B

Lab ID: 1602748-17

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,1,1-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,1,2-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,1-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,1-Dichloroethene	15	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,1-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,2,3-Trichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,2-Dibromoethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,2-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,2-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,3-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,3-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
1,4-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
2,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
2-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
4-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
4-Isopropyltoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Benzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Bromobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Bromodichloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Bromoform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Bromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Carbon tetrachloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Chlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Chloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Chloroform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Chloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
cis-1,2-Dichloroethene	4.3	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Dibromochloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	



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 : 08/12/2016

Client Sample ID MW-30B

Lab ID: 1602748-17

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Dichlorodifluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Ethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Hexachlorobutadiene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Isopropylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
m,p-Xylene	ND	1.0	1	B6H0260	08/09/2016	08/09/16 13:46	
Methylene chloride	ND	1.0	1	B6H0260	08/09/2016	08/09/16 13:46	
n-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
n-Propylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Naphthalene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
o-Xylene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
sec-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Styrene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
tert-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Tetrachloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Toluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Trichloroethene	80	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Trichlorofluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
Vinyl chloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:46	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.8 %</i>	<i>51 - 157</i>		B6H0260	08/09/2016	<i>08/09/16 13:46</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.9 %</i>	<i>61 - 123</i>		B6H0260	08/09/2016	<i>08/09/16 13:46</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>	<i>57 - 147</i>		B6H0260	08/09/2016	<i>08/09/16 13:46</i>	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6H0260	08/09/2016	<i>08/09/16 13:46</i>	



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San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-30B

Lab ID: 1602748-17

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	0.34	0.20	1	B6H0327	08/10/2016	08/12/16 14:02	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>74.3 %</i>	<i>31 - 106</i>		B6H0327	08/10/2016	<i>08/12/16 14:02</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>81.8 %</i>	<i>28 - 122</i>		B6H0327	08/10/2016	<i>08/12/16 14:02</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>69.7 %</i>	<i>43 - 131</i>		B6H0327	08/10/2016	<i>08/12/16 14:02</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>103 %</i>	<i>20 - 119</i>		B6H0327	08/10/2016	<i>08/12/16 14:02</i>	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-30A

Lab ID: 1602748-18

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,1,1-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,1,2-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,1-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,1-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,1-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,2,3-Trichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,2-Dibromoethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,2-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,2-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,3-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,3-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
1,4-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
2,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
2-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
4-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
4-Isopropyltoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Benzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Bromobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Bromodichloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Bromoform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Bromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Carbon tetrachloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Chlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Chloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Chloroform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Chloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Dibromochloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	



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 : 08/12/2016

Client Sample ID MW-30A

Lab ID: 1602748-18

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Dichlorodifluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Ethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Hexachlorobutadiene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Isopropylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
m,p-Xylene	ND	1.0	1	B6H0260	08/09/2016	08/09/16 13:23	
Methylene chloride	ND	1.0	1	B6H0260	08/09/2016	08/09/16 13:23	
n-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
n-Propylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Naphthalene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
o-Xylene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
sec-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Styrene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
tert-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Tetrachloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Toluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Trichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Trichlorofluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Vinyl chloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 13:23	
Surrogate: 1,2-Dichloroethane-d4	98.8 %	51 - 157		B6H0260	08/09/2016	08/09/16 13:23	
Surrogate: 4-Bromofluorobenzene	102 %	61 - 123		B6H0260	08/09/2016	08/09/16 13:23	
Surrogate: Dibromofluoromethane	101 %	57 - 147		B6H0260	08/09/2016	08/09/16 13:23	
Surrogate: Toluene-d8	103 %	61 - 119		B6H0260	08/09/2016	08/09/16 13:23	



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 : 08/12/2016

Client Sample ID MW-30A

Lab ID: 1602748-18

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	B6H0327	08/10/2016	08/12/16 13:06	
Surrogate: 1,2-Dichlorobenzene-d4	75.8 %	31 - 106		B6H0327	08/10/2016	08/12/16 13:06	
Surrogate: 2-Fluorobiphenyl	83.2 %	28 - 122		B6H0327	08/10/2016	08/12/16 13:06	
Surrogate: 4-Terphenyl-d14	73.1 %	43 - 131		B6H0327	08/10/2016	08/12/16 13:06	
Surrogate: Nitrobenzene-d5	104 %	20 - 119		B6H0327	08/10/2016	08/12/16 13:06	



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 : 08/12/2016

Client Sample ID MW-40

Lab ID: 1602748-19

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,1,1-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,1,2-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,1-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,1-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,1-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,2,3-Trichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,2-Dibromoethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,2-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,2-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,3-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,3-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
1,4-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
2,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
2-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
4-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
4-Isopropyltoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Benzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Bromobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Bromodichloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Bromoform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Bromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Carbon tetrachloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Chlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Chloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Chloroform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Chloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Dibromochloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	



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 : 08/12/2016

Client Sample ID MW-40

Lab ID: 1602748-19

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Dichlorodifluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Ethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Hexachlorobutadiene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Isopropylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
m,p-Xylene	ND	1.0	1	B6H0260	08/09/2016	08/09/16 11:06	
Methylene chloride	ND	1.0	1	B6H0260	08/09/2016	08/09/16 11:06	
n-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
n-Propylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Naphthalene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
o-Xylene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
sec-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Styrene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
tert-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Tetrachloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Toluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Trichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Trichlorofluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Vinyl chloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:06	
Surrogate: 1,2-Dichloroethane-d4	100 %	51 - 157		B6H0260	08/09/2016	08/09/16 11:06	
Surrogate: 4-Bromofluorobenzene	100 %	61 - 123		B6H0260	08/09/2016	08/09/16 11:06	
Surrogate: Dibromofluoromethane	103 %	57 - 147		B6H0260	08/09/2016	08/09/16 11:06	
Surrogate: Toluene-d8	104 %	61 - 119		B6H0260	08/09/2016	08/09/16 11:06	



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 : 08/12/2016

Client Sample ID MW-40

Lab ID: 1602748-19

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	B6H0330	08/10/2016	08/10/16 14:15	
Surrogate: 1,2-Dichlorobenzene-d4	70.3 %	31 - 106		B6H0330	08/10/2016	08/10/16 14:15	
Surrogate: 2-Fluorobiphenyl	68.9 %	28 - 122		B6H0330	08/10/2016	08/10/16 14:15	
Surrogate: 4-Terphenyl-d14	76.0 %	43 - 131		B6H0330	08/10/2016	08/10/16 14:15	
Surrogate: Nitrobenzene-d5	85.2 %	20 - 119		B6H0330	08/10/2016	08/10/16 14:15	



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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 : 08/12/2016

Client Sample ID MW-4000

Lab ID: 1602748-20

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,1,1-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,1,2-Trichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,1-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,1-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,1-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,2,3-Trichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,2-Dibromoethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,2-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,2-Dichloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,3-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,3-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
1,4-Dichlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
2,2-Dichloropropane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
2-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
4-Chlorotoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
4-Isopropyltoluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Benzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Bromobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Bromodichloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Bromoform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Bromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Carbon tetrachloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Chlorobenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Chloroethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Chloroform	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Chloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Dibromochloromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-4000

Lab ID: 1602748-20

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Dichlorodifluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Ethylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Hexachlorobutadiene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Isopropylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
m,p-Xylene	ND	1.0	1	B6H0260	08/09/2016	08/09/16 11:29	
Methylene chloride	ND	1.0	1	B6H0260	08/09/2016	08/09/16 11:29	
n-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
n-Propylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Naphthalene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
o-Xylene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
sec-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Styrene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
tert-Butylbenzene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Tetrachloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Toluene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Trichloroethene	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Trichlorofluoromethane	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Vinyl chloride	ND	0.50	1	B6H0260	08/09/2016	08/09/16 11:29	
Surrogate: 1,2-Dichloroethane-d4	97.7 %	51 - 157		B6H0260	08/09/2016	08/09/16 11:29	
Surrogate: 4-Bromofluorobenzene	99.0 %	61 - 123		B6H0260	08/09/2016	08/09/16 11:29	
Surrogate: Dibromofluoromethane	98.8 %	57 - 147		B6H0260	08/09/2016	08/09/16 11:29	
Surrogate: Toluene-d8	99.6 %	61 - 119		B6H0260	08/09/2016	08/09/16 11:29	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main, 532.30

Report To : Steve Netto

Reported : 08/12/2016

Client Sample ID MW-4000

Lab ID: 1602748-20

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	ND	0.20	1	B6H0330	08/10/2016	08/10/16 14:43	
Surrogate: 1,2-Dichlorobenzene-d4	70.6 %	31 - 106		B6H0330	08/10/2016	08/10/16 14:43	
Surrogate: 2-Fluorobiphenyl	73.3 %	28 - 122		B6H0330	08/10/2016	08/10/16 14:43	
Surrogate: 4-Terphenyl-d14	77.8 %	43 - 131		B6H0330	08/10/2016	08/10/16 14:43	
Surrogate: Nitrobenzene-d5	84.2 %	20 - 119		B6H0330	08/10/2016	08/10/16 14:43	



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 : 08/12/2016

QUALITY CONTROL SECTION

Volatile Organic Compounds by EPA 8260B - Quality Control

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

Batch B6H0199 - MSVOA_LL_W

Blank (B6H0199-BLK1)

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

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 Limit	Notes

Batch B6H0199 - MSVOA_LL_W (continued)

Blank (B6H0199-BLK1) - Continued

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

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				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.76</i>		<i>25.0000</i>		<i>95.0</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>25.34</i>		<i>25.0000</i>		<i>101</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.23</i>		<i>25.0000</i>		<i>96.9</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.46</i>		<i>25.0000</i>		<i>102</i>	<i>61 - 119</i>			

LCS (B6H0199-BS1)

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

1,1,1,2-Tetrachloroethane	22.6200	0.50	20.0000		113	76 - 132
1,1,1-Trichloroethane	21.8400	0.50	20.0000		109	72 - 144
1,1,2,2-Tetrachloroethane	19.5700	0.50	20.0000		97.8	70 - 120
1,1,2-Trichloroethane	18.4700	0.50	20.0000		92.4	75 - 120
1,1-Dichloroethane	23.4800	0.50	20.0000		117	65 - 127
1,1-Dichloroethene	18.0300	0.50	20.0000		90.2	63 - 142
1,1-Dichloropropene	21.5800	0.50	20.0000		108	78 - 137
1,2,3-Trichloropropane	18.4700	0.50	20.0000		92.4	73 - 118
1,2,3-Trichlorobenzene	19.7100	0.50	20.0000		98.6	53 - 164
1,2,4-Trichlorobenzene	20.5700	0.50	20.0000		103	58 - 144
1,2,4-Trimethylbenzene	21.7300	0.50	20.0000		109	75 - 140
1,2-Dibromo-3-chloropropane	18.1300	0.50	20.0000		90.6	61 - 131
1,2-Dibromoethane	19.0300	0.50	20.0000		95.2	74 - 125
1,2-Dichlorobenzene	20.1400	0.50	20.0000		101	78 - 122
1,2-Dichloroethane	19.2600	0.50	20.0000		96.3	70 - 126
1,2-Dichloropropane	19.8400	0.50	20.0000		99.2	69 - 120
1,3,5-Trimethylbenzene	21.7100	0.50	20.0000		109	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	% Rec Limits	RPD	RPD Limit	Notes

Batch B6H0199 - MSVOA_LL_W (continued)

LCS (B6H0199-BS1) - Continued

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

1,3-Dichlorobenzene	20.4100	0.50	20.0000		102	76 - 126			
1,3-Dichloropropane	19.9700	0.50	20.0000		99.8	76 - 117			
1,4-Dichlorobenzene	20.9900	0.50	20.0000		105	77 - 120			
2,2-Dichloropropane	23.0300	0.50	20.0000		115	47 - 169			
2-Chlorotoluene	21.8800	0.50	20.0000		109	75 - 135			
4-Chlorotoluene	21.7300	0.50	20.0000		109	70 - 133			
4-Isopropyltoluene	22.1300	0.50	20.0000		111	72 - 153			
Benzene	41.1400	0.50	40.0000		103	73 - 123			
Bromobenzene	20.7300	0.50	20.0000		104	75 - 121			
Bromodichloromethane	19.7100	0.50	20.0000		98.6	73 - 124			
Bromoform	18.9600	0.50	20.0000		94.8	70 - 135			
Bromomethane	31.4200	0.50	20.0000		157	10 - 166			
Carbon tetrachloride	24.2600	0.50	20.0000		121	65 - 171			
Chlorobenzene	20.1800	0.50	20.0000		101	80 - 121			
Chloroethane	25.5700	0.50	20.0000		128	55 - 143			
Chloroform	19.7900	0.50	20.0000		99.0	65 - 130			
Chloromethane	21.8700	0.50	20.0000		109	21 - 141			
cis-1,2-Dichloroethene	20.1500	0.50	20.0000		101	64 - 126			
cis-1,3-Dichloropropene	21.9800	0.50	20.0000		110	70 - 131			
Dibromochloromethane	21.2600	0.50	20.0000		106	74 - 125			
Dibromomethane	18.8400	0.50	20.0000		94.2	74 - 116			
Dichlorodifluoromethane	29.5800	0.50	20.0000		148	40 - 186			
Ethylbenzene	40.3700	0.50	40.0000		101	77 - 130			
Hexachlorobutadiene	20.7400	0.50	20.0000		104	52 - 176			
Isopropylbenzene	23.9000	0.50	20.0000		120	77 - 144			
m,p-Xylene	43.3100	1.0	40.0000		108	84 - 136			
Methylene chloride	20.5100	1.0	20.0000		103	72 - 150			
n-Butylbenzene	23.1500	0.50	20.0000		116	73 - 154			
n-Propylbenzene	22.2800	0.50	20.0000		111	77 - 145			
Naphthalene	19.9300	0.50	20.0000		99.6	55 - 137			
o-Xylene	41.4000	0.50	40.0000		104	79 - 135			
sec-Butylbenzene	22.2000	0.50	20.0000		111	73 - 157			
Styrene	21.2400	0.50	20.0000		106	78 - 125			
tert-Butylbenzene	21.6500	0.50	20.0000		108	78 - 149			
Tetrachloroethene	21.1400	0.50	20.0000		106	74 - 136			
Toluene	40.0400	0.50	40.0000		100	78 - 124			
trans-1,2-Dichloroethene	24.8400	0.50	20.0000		124	66 - 131			
Trichloroethene	19.7900	0.50	20.0000		99.0	78 - 128			
Trichlorofluoromethane	20.6200	0.50	20.0000		103	60 - 170			
Vinyl chloride	22.1300	0.50	20.0000		111	55 - 148			

Surrogate: 1,2-Dichloroethane-d4	23.72		25.0000		94.9	51 - 157			



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Reported : 08/12/2016

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

Batch B6H0199 - MSVOA_LL_W (continued)

LCS (B6H0199-BS1) - Continued

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

Surrogate: 4-Bromofluorobenzene	25.42		25.0000		102	61 - 123			
Surrogate: Dibromofluoromethane	24.62		25.0000		98.5	57 - 147			
Surrogate: Toluene-d8	25.27		25.0000		101	61 - 119			

Matrix Spike (B6H0199-MS1)

Source: 1602748-06

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

1,1,1,2-Tetrachloroethane	23.6800	0.50	20.0000	ND	118	76 - 132			
1,1,1-Trichloroethane	24.6000	0.50	20.0000	ND	123	72 - 144			
1,1,2,2-Tetrachloroethane	21.5100	0.50	20.0000	ND	108	70 - 120			
1,1,2-Trichloroethane	20.6700	0.50	20.0000	ND	103	75 - 120			
1,1-Dichloroethane	26.2700	0.50	20.0000	ND	131	65 - 127			M1
1,1-Dichloroethene	20.3200	0.50	20.0000	ND	102	63 - 142			
1,1-Dichloropropene	22.8500	0.50	20.0000	ND	114	78 - 137			
1,2,3-Trichloropropane	20.5400	0.50	20.0000	ND	103	73 - 118			
1,2,3-Trichlorobenzene	20.9800	0.50	20.0000	ND	105	53 - 164			
1,2,4-Trichlorobenzene	21.3200	0.50	20.0000	ND	107	58 - 144			
1,2,4-Trimethylbenzene	21.8500	0.50	20.0000	ND	109	75 - 140			
1,2-Dibromo-3-chloropropane	20.2700	0.50	20.0000	ND	101	61 - 131			
1,2-Dibromoethane	20.6000	0.50	20.0000	ND	103	74 - 125			
1,2-Dichlorobenzene	20.8100	0.50	20.0000	ND	104	78 - 122			
1,2-Dichloroethane	20.9400	0.50	20.0000	ND	105	70 - 126			
1,2-Dichloropropane	21.4200	0.50	20.0000	ND	107	69 - 120			
1,3,5-Trimethylbenzene	22.0900	0.50	20.0000	ND	110	73 - 145			
1,3-Dichlorobenzene	21.2500	0.50	20.0000	ND	106	76 - 126			
1,3-Dichloropropane	21.6400	0.50	20.0000	ND	108	76 - 117			
1,4-Dichlorobenzene	21.2300	0.50	20.0000	ND	106	77 - 120			
2,2-Dichloropropane	20.9400	0.50	20.0000	ND	105	47 - 169			
2-Chlorotoluene	22.3000	0.50	20.0000	ND	112	75 - 135			
4-Chlorotoluene	21.9600	0.50	20.0000	ND	110	77 - 130			
4-Isopropyltoluene	22.4800	0.50	20.0000	ND	112	72 - 153			
Benzene	43.7300	0.50	40.0000	ND	109	73 - 123			
Bromobenzene	21.3500	0.50	20.0000	ND	107	75 - 121			
Bromodichloromethane	21.2400	0.50	20.0000	ND	106	73 - 124			
Bromoform	20.9900	0.50	20.0000	ND	105	70 - 135			
Bromomethane	19.9300	0.50	20.0000	ND	99.6	10 - 166			
Carbon tetrachloride	25.1600	0.50	20.0000	ND	126	65 - 171			
Chlorobenzene	21.6700	0.50	20.0000	ND	108	80 - 121			
Chloroethane	25.9500	0.50	20.0000	ND	130	55 - 143			
Chloroform	21.9100	0.50	20.0000	ND	110	65 - 130			
Chloromethane	36.7400	0.50	20.0000	0.310000	182	21 - 141			M1
cis-1,2-Dichloroethene	22.0200	0.50	20.0000	ND	110	64 - 126			
cis-1,3-Dichloropropene	21.5400	0.50	20.0000	ND	108	70 - 131			
Dibromochloromethane	22.3200	0.50	20.0000	ND	112	74 - 125			



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

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

Batch B6H0199 - MSVOA_LL_W (continued)

Matrix Spike (B6H0199-MS1) - Continued

Source: 1602748-06

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

Dibromomethane	20.8200	0.50	20.0000	ND	104	74 - 116			
Dichlorodifluoromethane	32.6700	0.50	20.0000	ND	163	40 - 186			
Ethylbenzene	43.2000	0.50	40.0000	ND	108	77 - 130			
Hexachlorobutadiene	20.9800	0.50	20.0000	ND	105	52 - 176			
Isopropylbenzene	24.3400	0.50	20.0000	ND	122	77 - 144			
m,p-Xylene	46.0500	1.0	40.0000	ND	115	84 - 136			
Methylene chloride	23.5500	1.0	20.0000	ND	118	72 - 150			
n-Butylbenzene	22.9200	0.50	20.0000	ND	115	73 - 154			
n-Propylbenzene	22.6100	0.50	20.0000	ND	113	77 - 145			
Naphthalene	22.1900	0.50	20.0000	ND	111	55 - 137			
o-Xylene	44.2700	0.50	40.0000	ND	111	79 - 135			
sec-Butylbenzene	22.6000	0.50	20.0000	ND	113	73 - 157			
Styrene	22.3200	0.50	20.0000	ND	112	78 - 125			
tert-Butylbenzene	22.5900	0.50	20.0000	ND	113	78 - 149			
Tetrachloroethene	21.8700	0.50	20.0000	ND	109	74 - 136			
Toluene	42.8100	0.50	40.0000	ND	107	78 - 124			
trans-1,2-Dichloroethene	26.8900	0.50	20.0000	ND	134	66 - 131			M1
Trichloroethene	20.8900	0.50	20.0000	ND	104	78 - 128			
Trichlorofluoromethane	24.0300	0.50	20.0000	ND	120	60 - 170			
Vinyl chloride	26.4800	0.50	20.0000	ND	132	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	25.60		25.0000		102	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.30		25.0000		101	61 - 123			
Surrogate: Dibromofluoromethane	25.19		25.0000		101	57 - 147			
Surrogate: Toluene-d8	24.65		25.0000		98.6	61 - 119			

Matrix Spike Dup (B6H0199-MSD1)

Source: 1602748-06

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

1,1,1,2-Tetrachloroethane	23.8100	0.50	20.0000	ND	119	76 - 132	0.547	20	
1,1,1-Trichloroethane	24.1100	0.50	20.0000	ND	121	72 - 144	2.01	20	
1,1,2,2-Tetrachloroethane	21.8300	0.50	20.0000	ND	109	70 - 120	1.48	20	
1,1,2-Trichloroethane	20.5900	0.50	20.0000	ND	103	75 - 120	0.388	20	
1,1-Dichloroethane	25.4900	0.50	20.0000	ND	127	65 - 127	3.01	20	
1,1-Dichloroethene	19.9700	0.50	20.0000	ND	99.8	63 - 142	1.74	20	
1,1-Dichloropropene	22.9800	0.50	20.0000	ND	115	78 - 137	0.567	20	
1,2,3-Trichloropropane	20.2500	0.50	20.0000	ND	101	73 - 118	1.42	20	
1,2,3-Trichlorobenzene	20.5600	0.50	20.0000	ND	103	53 - 164	2.02	20	
1,2,4-Trichlorobenzene	21.2100	0.50	20.0000	ND	106	58 - 144	0.517	20	
1,2,4-Trimethylbenzene	21.7700	0.50	20.0000	ND	109	75 - 140	0.367	20	
1,2-Dibromo-3-chloropropane	20.2200	0.50	20.0000	ND	101	61 - 131	0.247	20	
1,2-Dibromoethane	20.5900	0.50	20.0000	ND	103	74 - 125	0.0486	20	
1,2-Dichlorobenzene	21.0800	0.50	20.0000	ND	105	78 - 122	1.29	20	
1,2-Dichloroethane	20.9600	0.50	20.0000	ND	105	70 - 126	0.0955	20	



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

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

Batch B6H0199 - MSVOA_LL_W (continued)

Matrix Spike Dup (B6H0199-MSD1) - Continued

Source: 1602748-06

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

1,2-Dichloropropane	21.1900	0.50	20.0000	ND	106	69 - 120	1.08	20	
1,3,5-Trimethylbenzene	22.3700	0.50	20.0000	ND	112	73 - 145	1.26	20	
1,3-Dichlorobenzene	21.4900	0.50	20.0000	ND	107	76 - 126	1.12	20	
1,3-Dichloropropane	21.1100	0.50	20.0000	ND	106	76 - 117	2.48	20	
1,4-Dichlorobenzene	21.4500	0.50	20.0000	ND	107	77 - 120	1.03	20	
2,2-Dichloropropane	21.3900	0.50	20.0000	ND	107	47 - 169	2.13	20	
2-Chlorotoluene	22.4000	0.50	20.0000	ND	112	75 - 135	0.447	20	
4-Chlorotoluene	22.2100	0.50	20.0000	ND	111	77 - 130	1.13	20	
4-Isopropyltoluene	22.4600	0.50	20.0000	ND	112	72 - 153	0.0890	20	
Benzene	43.3400	0.50	40.0000	ND	108	73 - 123	0.896	20	
Bromobenzene	21.3100	0.50	20.0000	ND	107	75 - 121	0.188	20	
Bromodichloromethane	21.1400	0.50	20.0000	ND	106	73 - 124	0.472	20	
Bromoform	20.8400	0.50	20.0000	ND	104	70 - 135	0.717	20	
Bromomethane	23.1300	0.50	20.0000	ND	116	10 - 166	14.9	20	
Carbon tetrachloride	25.1800	0.50	20.0000	ND	126	65 - 171	0.0795	20	
Chlorobenzene	21.3700	0.50	20.0000	ND	107	80 - 121	1.39	20	
Chloroethane	25.8700	0.50	20.0000	ND	129	55 - 143	0.309	20	
Chloroform	21.5100	0.50	20.0000	ND	108	65 - 130	1.84	20	
Chloromethane	34.6900	0.50	20.0000	0.310000	172	21 - 141	5.74	20	M1
cis-1,2-Dichloroethene	21.5000	0.50	20.0000	ND	108	64 - 126	2.39	20	
cis-1,3-Dichloropropene	21.4700	0.50	20.0000	ND	107	70 - 131	0.326	20	
Dibromochloromethane	22.5800	0.50	20.0000	ND	113	74 - 125	1.16	20	
Dibromomethane	20.0800	0.50	20.0000	ND	100	74 - 116	3.62	20	
Dichlorodifluoromethane	31.6700	0.50	20.0000	ND	158	40 - 186	3.11	20	
Ethylbenzene	42.8900	0.50	40.0000	ND	107	77 - 130	0.720	20	
Hexachlorobutadiene	21.1000	0.50	20.0000	ND	106	52 - 176	0.570	20	
Isopropylbenzene	24.4400	0.50	20.0000	ND	122	77 - 144	0.410	20	
m,p-Xylene	45.8400	1.0	40.0000	ND	115	84 - 136	0.457	20	
Methylene chloride	22.8300	1.0	20.0000	ND	114	72 - 150	3.10	20	
n-Butylbenzene	23.0800	0.50	20.0000	ND	115	73 - 154	0.696	20	
n-Propylbenzene	22.7600	0.50	20.0000	ND	114	77 - 145	0.661	20	
Naphthalene	22.0800	0.50	20.0000	ND	110	55 - 137	0.497	20	
o-Xylene	43.5200	0.50	40.0000	ND	109	79 - 135	1.71	20	
sec-Butylbenzene	22.7900	0.50	20.0000	ND	114	73 - 157	0.837	20	
Styrene	22.2900	0.50	20.0000	ND	111	78 - 125	0.134	20	
tert-Butylbenzene	22.8300	0.50	20.0000	ND	114	78 - 149	1.06	20	
Tetrachloroethene	21.3000	0.50	20.0000	ND	106	74 - 136	2.64	20	
Toluene	42.4400	0.50	40.0000	ND	106	78 - 124	0.868	20	
trans-1,2-Dichloroethene	26.6000	0.50	20.0000	ND	133	66 - 131	1.08	20	M1
Trichloroethene	20.9000	0.50	20.0000	ND	104	78 - 128	0.0479	20	
Trichlorofluoromethane	22.8000	0.50	20.0000	ND	114	60 - 170	5.25	20	
Vinyl chloride	26.3600	0.50	20.0000	ND	132	55 - 148	0.454	20	



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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 : 08/12/2016

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

Batch B6H0199 - MSVOA_LL_W (continued)

Matrix Spike Dup (B6H0199-MSD1) - Continued

Source: 1602748-06

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

Surrogate: 1,2-Dichloroethane-d4	25.07		25.0000		100	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.55		25.0000		102	61 - 123			
Surrogate: Dibromofluoromethane	25.24		25.0000		101	57 - 147			
Surrogate: Toluene-d8	24.95		25.0000		99.8	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 Limits	RPD	RPD Limit	Notes

Batch B6H0260 - MSVOA_LL_W

Blank (B6H0260-BLK1)

Prepared: 8/9/2016 Analyzed: 8/9/2016

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 Limit	Notes

Batch B6H0260 - MSVOA_LL_W (continued)

Blank (B6H0260-BLK1) - Continued

Prepared: 8/9/2016 Analyzed: 8/9/2016

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			

Surrogate: 1,2-Dichloroethane-d4	24.36		25.0000		97.4	51 - 157
Surrogate: 4-Bromofluorobenzene	24.84		25.0000		99.4	61 - 123
Surrogate: Dibromofluoromethane	24.60		25.0000		98.4	57 - 147
Surrogate: Toluene-d8	25.57		25.0000		102	61 - 119

LCS (B6H0260-BS1)

Prepared: 8/9/2016 Analyzed: 8/9/2016

1,1,1,2-Tetrachloroethane	23.3400	0.50	20.0000		117	76 - 132
1,1,1-Trichloroethane	20.9800	0.50	20.0000		105	72 - 144
1,1,2,2-Tetrachloroethane	19.5200	0.50	20.0000		97.6	70 - 120
1,1,2-Trichloroethane	19.3400	0.50	20.0000		96.7	75 - 120
1,1-Dichloroethane	23.9900	0.50	20.0000		120	65 - 127
1,1-Dichloroethene	18.0100	0.50	20.0000		90.0	63 - 142
1,1-Dichloropropene	20.6800	0.50	20.0000		103	78 - 137
1,2,3-Trichloropropane	18.7100	0.50	20.0000		93.6	73 - 118
1,2,3-Trichlorobenzene	19.7500	0.50	20.0000		98.8	53 - 164
1,2,4-Trichlorobenzene	20.9600	0.50	20.0000		105	58 - 144
1,2,4-Trimethylbenzene	20.7600	0.50	20.0000		104	75 - 140
1,2-Dibromo-3-chloropropane	18.1300	0.50	20.0000		90.6	61 - 131
1,2-Dibromoethane	19.2500	0.50	20.0000		96.2	74 - 125
1,2-Dichlorobenzene	20.1600	0.50	20.0000		101	78 - 122
1,2-Dichloroethane	19.8500	0.50	20.0000		99.2	70 - 126
1,2-Dichloropropane	20.5200	0.50	20.0000		103	69 - 120
1,3,5-Trimethylbenzene	20.9200	0.50	20.0000		105	73 - 145
1,3-Dichlorobenzene	21.0800	0.50	20.0000		105	76 - 126
1,3-Dichloropropane	20.1100	0.50	20.0000		101	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 Limit	Notes

Batch B6H0260 - MSVOA_LL_W (continued)

LCS (B6H0260-BS1) - Continued

Prepared: 8/9/2016 Analyzed: 8/9/2016

1,4-Dichlorobenzene	21.0100	0.50	20.0000		105	77 - 120			
2,2-Dichloropropane	21.6000	0.50	20.0000		108	47 - 169			
2-Chlorotoluene	21.6300	0.50	20.0000		108	75 - 135			
4-Chlorotoluene	21.8400	0.50	20.0000		109	70 - 133			
4-Isopropyltoluene	20.9500	0.50	20.0000		105	72 - 153			
Benzene	41.6500	0.50	40.0000		104	73 - 123			
Bromobenzene	20.9700	0.50	20.0000		105	75 - 121			
Bromodichloromethane	20.9400	0.50	20.0000		105	73 - 124			
Bromoform	19.5600	0.50	20.0000		97.8	70 - 135			
Bromomethane	26.8300	0.50	20.0000		134	10 - 166			
Carbon tetrachloride	22.3400	0.50	20.0000		112	65 - 171			
Chlorobenzene	20.3000	0.50	20.0000		102	80 - 121			
Chloroethane	26.5300	0.50	20.0000		133	55 - 143			
Chloroform	20.5200	0.50	20.0000		103	65 - 130			
Chloromethane	25.8600	0.50	20.0000		129	21 - 141			
cis-1,2-Dichloroethene	20.8300	0.50	20.0000		104	64 - 126			
cis-1,3-Dichloropropene	22.5700	0.50	20.0000		113	70 - 131			
Dibromochloromethane	22.1500	0.50	20.0000		111	74 - 125			
Dibromomethane	20.2500	0.50	20.0000		101	74 - 116			
Dichlorodifluoromethane	26.8100	0.50	20.0000		134	40 - 186			
Ethylbenzene	39.9600	0.50	40.0000		99.9	77 - 130			
Hexachlorobutadiene	20.8600	0.50	20.0000		104	52 - 176			
Isopropylbenzene	22.6400	0.50	20.0000		113	77 - 144			
m,p-Xylene	42.9500	1.0	40.0000		107	84 - 136			
Methylene chloride	22.0600	1.0	20.0000		110	72 - 150			
n-Butylbenzene	22.0600	0.50	20.0000		110	73 - 154			
n-Propylbenzene	21.4800	0.50	20.0000		107	77 - 145			
Naphthalene	19.5700	0.50	20.0000		97.8	55 - 137			
o-Xylene	41.5100	0.50	40.0000		104	79 - 135			
sec-Butylbenzene	21.1200	0.50	20.0000		106	73 - 157			
Styrene	21.5500	0.50	20.0000		108	78 - 125			
tert-Butylbenzene	20.7500	0.50	20.0000		104	78 - 149			
Tetrachloroethene	20.0100	0.50	20.0000		100	74 - 136			
Toluene	40.3300	0.50	40.0000		101	78 - 124			
trans-1,2-Dichloroethene	24.8000	0.50	20.0000		124	66 - 131			
Trichloroethene	19.4100	0.50	20.0000		97.0	78 - 128			
Trichlorofluoromethane	20.3000	0.50	20.0000		102	60 - 170			
Vinyl chloride	22.0300	0.50	20.0000		110	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	24.70		25.0000		98.8	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.79		25.0000		103	61 - 123			
Surrogate: Dibromofluoromethane	25.44		25.0000		102	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

Batch B6H0260 - MSVOA_LL_W (continued)

LCS (B6H0260-BS1) - Continued

Prepared: 8/9/2016 Analyzed: 8/9/2016

Surrogate: Toluene-d8 25.49 25.0000 102 61 - 119

Matrix Spike (B6H0260-MS1)

Source: 1602748-19

Prepared: 8/9/2016 Analyzed: 8/9/2016

1,1,1,2-Tetrachloroethane	23.9700	0.50	20.0000	ND	120	76 - 132			
1,1,1-Trichloroethane	24.2300	0.50	20.0000	ND	121	72 - 144			
1,1,2,2-Tetrachloroethane	20.6900	0.50	20.0000	ND	103	70 - 120			
1,1,2-Trichloroethane	20.1700	0.50	20.0000	ND	101	75 - 120			
1,1-Dichloroethane	26.3300	0.50	20.0000	ND	132	65 - 127			M1
1,1-Dichloroethene	20.8000	0.50	20.0000	ND	104	63 - 142			
1,1-Dichloropropene	23.6400	0.50	20.0000	ND	118	78 - 137			
1,2,3-Trichloropropane	19.1500	0.50	20.0000	ND	95.8	73 - 118			
1,2,3-Trichlorobenzene	20.2900	0.50	20.0000	ND	101	53 - 164			
1,2,4-Trichlorobenzene	21.4900	0.50	20.0000	ND	107	58 - 144			
1,2,4-Trimethylbenzene	22.0200	0.50	20.0000	ND	110	75 - 140			
1,2-Dibromo-3-chloropropane	18.5500	0.50	20.0000	ND	92.8	61 - 131			
1,2-Dibromoethane	20.2800	0.50	20.0000	ND	101	74 - 125			
1,2-Dichlorobenzene	20.7200	0.50	20.0000	ND	104	78 - 122			
1,2-Dichloroethane	20.4400	0.50	20.0000	ND	102	70 - 126			
1,2-Dichloropropane	21.2200	0.50	20.0000	ND	106	69 - 120			
1,3,5-Trimethylbenzene	22.3300	0.50	20.0000	ND	112	73 - 145			
1,3-Dichlorobenzene	21.6400	0.50	20.0000	ND	108	76 - 126			
1,3-Dichloropropane	21.1500	0.50	20.0000	ND	106	76 - 117			
1,4-Dichlorobenzene	21.7300	0.50	20.0000	ND	109	77 - 120			
2,2-Dichloropropane	24.6300	0.50	20.0000	ND	123	47 - 169			
2-Chlorotoluene	22.6000	0.50	20.0000	ND	113	75 - 135			
4-Chlorotoluene	22.4700	0.50	20.0000	ND	112	77 - 130			
4-Isopropyltoluene	23.4000	0.50	20.0000	ND	117	72 - 153			
Benzene	44.4900	0.50	40.0000	ND	111	73 - 123			
Bromobenzene	21.0500	0.50	20.0000	ND	105	75 - 121			
Bromodichloromethane	21.1000	0.50	20.0000	ND	106	73 - 124			
Bromoform	19.9600	0.50	20.0000	ND	99.8	70 - 135			
Bromomethane	24.6700	0.50	20.0000	ND	123	10 - 166			
Carbon tetrachloride	26.1600	0.50	20.0000	ND	131	65 - 171			
Chlorobenzene	21.6500	0.50	20.0000	ND	108	80 - 121			
Chloroethane	42.3600	0.50	20.0000	ND	212	55 - 143			M1
Chloroform	21.2100	0.50	20.0000	ND	106	65 - 130			
Chloromethane	27.1900	0.50	20.0000	ND	136	21 - 141			
cis-1,2-Dichloroethene	21.9100	0.50	20.0000	ND	110	64 - 126			
cis-1,3-Dichloropropene	21.8800	0.50	20.0000	ND	109	70 - 131			
Dibromochloromethane	22.3100	0.50	20.0000	ND	112	74 - 125			
Dibromomethane	20.3700	0.50	20.0000	ND	102	74 - 116			
Dichlorodifluoromethane	31.6600	0.50	20.0000	ND	158	40 - 186			



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

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

Batch B6H0260 - MSVOA_LL_W (continued)

Matrix Spike (B6H0260-MS1) - Continued

Source: 1602748-19

Prepared: 8/9/2016 Analyzed: 8/9/2016

Ethylbenzene	44.0400	0.50	40.0000	ND	110	77 - 130			
Hexachlorobutadiene	22.0500	0.50	20.0000	ND	110	52 - 176			
Isopropylbenzene	24.7600	0.50	20.0000	ND	124	77 - 144			
m,p-Xylene	46.7700	1.0	40.0000	ND	117	84 - 136			
Methylene chloride	23.1300	1.0	20.0000	ND	116	72 - 150			
n-Butylbenzene	24.2400	0.50	20.0000	ND	121	73 - 154			
n-Propylbenzene	23.3000	0.50	20.0000	ND	116	77 - 145			
Naphthalene	21.0200	0.50	20.0000	ND	105	55 - 137			
o-Xylene	44.8900	0.50	40.0000	ND	112	79 - 135			
sec-Butylbenzene	23.4400	0.50	20.0000	ND	117	73 - 157			
Styrene	22.6600	0.50	20.0000	ND	113	78 - 125			
tert-Butylbenzene	22.7000	0.50	20.0000	ND	114	78 - 149			
Tetrachloroethene	22.9200	0.50	20.0000	ND	115	74 - 136			
Toluene	43.0400	0.50	40.0000	ND	108	78 - 124			
trans-1,2-Dichloroethene	27.6100	0.50	20.0000	ND	138	66 - 131			M1
Trichloroethene	21.2500	0.50	20.0000	ND	106	78 - 128			
Trichlorofluoromethane	23.6700	0.50	20.0000	ND	118	60 - 170			
Vinyl chloride	25.6800	0.50	20.0000	ND	128	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	24.90		25.0000		99.6	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.57		25.0000		102	61 - 123			
Surrogate: Dibromofluoromethane	25.14		25.0000		101	57 - 147			
Surrogate: Toluene-d8	25.01		25.0000		100	61 - 119			

Matrix Spike Dup (B6H0260-MSD1)

Source: 1602748-19

Prepared: 8/9/2016 Analyzed: 8/9/2016

1,1,1,2-Tetrachloroethane	23.6700	0.50	20.0000	ND	118	76 - 132	1.26	20	
1,1,1-Trichloroethane	24.0600	0.50	20.0000	ND	120	72 - 144	0.704	20	
1,1,2,2-Tetrachloroethane	21.1900	0.50	20.0000	ND	106	70 - 120	2.39	20	
1,1,2-Trichloroethane	20.3300	0.50	20.0000	ND	102	75 - 120	0.790	20	
1,1-Dichloroethane	25.7000	0.50	20.0000	ND	128	65 - 127	2.42	20	M1
1,1-Dichloroethene	19.9700	0.50	20.0000	ND	99.8	63 - 142	4.07	20	
1,1-Dichloropropene	23.5800	0.50	20.0000	ND	118	78 - 137	0.254	20	
1,2,3-Trichloropropane	19.8100	0.50	20.0000	ND	99.0	73 - 118	3.39	20	
1,2,3-Trichlorobenzene	20.7600	0.50	20.0000	ND	104	53 - 164	2.29	20	
1,2,4-Trichlorobenzene	21.5900	0.50	20.0000	ND	108	58 - 144	0.464	20	
1,2,4-Trimethylbenzene	22.0700	0.50	20.0000	ND	110	75 - 140	0.227	20	
1,2-Dibromo-3-chloropropane	19.4100	0.50	20.0000	ND	97.0	61 - 131	4.53	20	
1,2-Dibromoethane	20.5100	0.50	20.0000	ND	103	74 - 125	1.13	20	
1,2-Dichlorobenzene	21.0600	0.50	20.0000	ND	105	78 - 122	1.63	20	
1,2-Dichloroethane	20.4500	0.50	20.0000	ND	102	70 - 126	0.0489	20	
1,2-Dichloropropane	21.5900	0.50	20.0000	ND	108	69 - 120	1.73	20	
1,3,5-Trimethylbenzene	22.6200	0.50	20.0000	ND	113	73 - 145	1.29	20	



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

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6H0260 - MSVOA_LL_W (continued)									
Matrix Spike Dup (B6H0260-MSD1) - Continued		Source: 1602748-19		Prepared: 8/9/2016 Analyzed: 8/9/2016					
1,3-Dichlorobenzene	21.7200	0.50	20.0000	ND	109	76 - 126	0.369	20	
1,3-Dichloropropane	20.7700	0.50	20.0000	ND	104	76 - 117	1.81	20	
1,4-Dichlorobenzene	21.7700	0.50	20.0000	ND	109	77 - 120	0.184	20	
2,2-Dichloropropane	24.6800	0.50	20.0000	ND	123	47 - 169	0.203	20	
2-Chlorotoluene	22.8700	0.50	20.0000	ND	114	75 - 135	1.19	20	
4-Chlorotoluene	22.5900	0.50	20.0000	ND	113	77 - 130	0.533	20	
4-Isopropyltoluene	23.2700	0.50	20.0000	ND	116	72 - 153	0.557	20	
Benzene	44.3000	0.50	40.0000	ND	111	73 - 123	0.428	20	
Bromobenzene	21.6000	0.50	20.0000	ND	108	75 - 121	2.58	20	
Bromodichloromethane	21.0200	0.50	20.0000	ND	105	73 - 124	0.380	20	
Bromoform	20.0900	0.50	20.0000	ND	100	70 - 135	0.649	20	
Bromomethane	16.4700	0.50	20.0000	ND	82.4	10 - 166	39.9	20	R
Carbon tetrachloride	26.0700	0.50	20.0000	ND	130	65 - 171	0.345	20	
Chlorobenzene	21.2300	0.50	20.0000	ND	106	80 - 121	1.96	20	
Chloroethane	38.3500	0.50	20.0000	ND	192	55 - 143	9.94	20	M1
Chloroform	21.4200	0.50	20.0000	ND	107	65 - 130	0.985	20	
Chloromethane	25.5800	0.50	20.0000	ND	128	21 - 141	6.10	20	
cis-1,2-Dichloroethene	22.0600	0.50	20.0000	ND	110	64 - 126	0.682	20	
cis-1,3-Dichloropropene	21.8600	0.50	20.0000	ND	109	70 - 131	0.0914	20	
Dibromochloromethane	22.2700	0.50	20.0000	ND	111	74 - 125	0.179	20	
Dibromomethane	20.8000	0.50	20.0000	ND	104	74 - 116	2.09	20	
Dichlorodifluoromethane	30.8300	0.50	20.0000	ND	154	40 - 186	2.66	20	
Ethylbenzene	42.7300	0.50	40.0000	ND	107	77 - 130	3.02	20	
Hexachlorobutadiene	21.6900	0.50	20.0000	ND	108	52 - 176	1.65	20	
Isopropylbenzene	24.9800	0.50	20.0000	ND	125	77 - 144	0.885	20	
m,p-Xylene	45.7800	1.0	40.0000	ND	114	84 - 136	2.14	20	
Methylene chloride	22.6000	1.0	20.0000	ND	113	72 - 150	2.32	20	
n-Butylbenzene	24.2500	0.50	20.0000	ND	121	73 - 154	0.0412	20	
n-Propylbenzene	23.5400	0.50	20.0000	ND	118	77 - 145	1.02	20	
Naphthalene	21.6700	0.50	20.0000	ND	108	55 - 137	3.05	20	
o-Xylene	43.9300	0.50	40.0000	ND	110	79 - 135	2.16	20	
sec-Butylbenzene	23.5300	0.50	20.0000	ND	118	73 - 157	0.383	20	
Styrene	22.5800	0.50	20.0000	ND	113	78 - 125	0.354	20	
tert-Butylbenzene	23.1200	0.50	20.0000	ND	116	78 - 149	1.83	20	
Tetrachloroethene	21.9600	0.50	20.0000	ND	110	74 - 136	4.28	20	
Toluene	43.4700	0.50	40.0000	ND	109	78 - 124	0.994	20	
trans-1,2-Dichloroethene	27.3500	0.50	20.0000	ND	137	66 - 131	0.946	20	M1
Trichloroethene	21.4900	0.50	20.0000	ND	107	78 - 128	1.12	20	
Trichlorofluoromethane	22.7300	0.50	20.0000	ND	114	60 - 170	4.05	20	
Vinyl chloride	24.4900	0.50	20.0000	ND	122	55 - 148	4.74	20	
Surrogate: 1,2-Dichloroethane-d4	24.84		25.0000		99.4	51 - 157			



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 : 08/12/2016

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

Batch B6H0260 - MSVOA_LL_W (continued)

Matrix Spike Dup (B6H0260-MSD1) - Continued

Source: 1602748-19

Prepared: 8/9/2016 Analyzed: 8/9/2016

Surrogate: 4-Bromofluorobenzene	25.31	25.0000	101	61 - 123
Surrogate: Dibromofluoromethane	25.22	25.0000	101	57 - 147
Surrogate: Toluene-d8	25.39	25.0000	102	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 : 08/12/2016

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

Batch B6H0292 - MSSEMI_W

Blank (B6H0292-BLK1)

Prepared: 8/9/2016 Analyzed: 8/11/2016

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	53.18		100.000		53.2	42 - 106			
Surrogate: 2-Fluorobiphenyl	68.85		100.000		68.8	55 - 117			
Surrogate: 4-Terphenyl-d14	95.03		100.000		95.0	52 - 142			
Surrogate: Nitrobenzene-d5	60.88		100.000		60.9	43 - 116			

LCS (B6H0292-BS1)

Prepared: 8/9/2016 Analyzed: 8/11/2016

1,4-Dioxane	101.410	2.0	100.000		101	62 - 127			
Surrogate: 1,2-Dichlorobenzene-d4	67.38		100.000		67.4	42 - 106			
Surrogate: 2-Fluorobiphenyl	82.69		100.000		82.7	55 - 117			
Surrogate: 4-Terphenyl-d14	91.47		100.000		91.5	52 - 142			
Surrogate: Nitrobenzene-d5	75.97		100.000		76.0	43 - 116			

LCS Dup (B6H0292-BS1)

Prepared: 8/9/2016 Analyzed: 8/11/2016

1,4-Dioxane	104.550	2.0	100.000		105	62 - 127	3.05	20	
Surrogate: 1,2-Dichlorobenzene-d4	68.54		100.000		68.5	42 - 106			
Surrogate: 2-Fluorobiphenyl	85.97		100.000		86.0	55 - 117			
Surrogate: 4-Terphenyl-d14	90.84		100.000		90.8	52 - 142			
Surrogate: Nitrobenzene-d5	78.03		100.000		78.0	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 : 08/12/2016

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	% Rec Limits	RPD	RPD Limit	Notes

Batch B6H0327 - MSSEMI_ISOTOPEDILN_W

Blank (B6H0327-BLK1)

Prepared: 8/10/2016 Analyzed: 8/10/2016

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.7158		1.00000		71.6	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.7249		1.00000		72.5	28 - 122			
Surrogate: 4-Terphenyl-d14	0.8320		1.00000		83.2	43 - 131			
Surrogate: Nitrobenzene-d5	0.8500		1.00000		85.0	20 - 119			

LCS (B6H0327-BS1)

Prepared: 8/10/2016 Analyzed: 8/10/2016

1,4-Dioxane	1.13084	0.20	1.00000		113	49 - 169			
Surrogate: 1,2-Dichlorobenzene-d4	0.7331		1.00000		73.3	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.7379		1.00000		73.8	28 - 122			
Surrogate: 4-Terphenyl-d14	0.8226		1.00000		82.3	43 - 131			
Surrogate: Nitrobenzene-d5	0.8785		1.00000		87.8	20 - 119			

Matrix Spike (B6H0327-MS1)

Source: 1602748-06

Prepared: 8/10/2016 Analyzed: 8/10/2016

1,4-Dioxane	1.29959	0.20	1.00000	ND	130	49 - 169			
Surrogate: 1,2-Dichlorobenzene-d4	0.7049		1.00000		70.5	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.7481		1.00000		74.8	28 - 122			
Surrogate: 4-Terphenyl-d14	0.8270		1.00000		82.7	43 - 131			
Surrogate: Nitrobenzene-d5	0.8450		1.00000		84.5	20 - 119			

Matrix Spike Dup (B6H0327-MSD1)

Source: 1602748-06

Prepared: 8/10/2016 Analyzed: 8/11/2016

1,4-Dioxane	1.32963	0.20	1.00000	ND	133	49 - 169	2.29	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.6901		1.00000		69.0	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.7150		1.00000		71.5	28 - 122			
Surrogate: 4-Terphenyl-d14	0.8149		1.00000		81.5	43 - 131			
Surrogate: Nitrobenzene-d5	0.8278		1.00000		82.8	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 : 08/12/2016

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	% Rec Limits	RPD	RPD Limit	Notes

Batch B6H0330 - MSSEMI_ISOTOPEDILN_W

Blank (B6H0330-BLK1)

Prepared: 8/10/2016 Analyzed: 8/10/2016

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.7262		1.00000		72.6	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.6925		1.00000		69.3	28 - 122			
Surrogate: 4-Terphenyl-d14	0.7770		1.00000		77.7	43 - 131			
Surrogate: Nitrobenzene-d5	0.8775		1.00000		87.8	20 - 119			

LCS (B6H0330-BS1)

Prepared: 8/10/2016 Analyzed: 8/10/2016

1,4-Dioxane	1.28316	0.20	1.00000		128	49 - 169			
Surrogate: 1,2-Dichlorobenzene-d4	0.7127		1.00000		71.3	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.7083		1.00000		70.8	28 - 122			
Surrogate: 4-Terphenyl-d14	0.8295		1.00000		82.9	43 - 131			
Surrogate: Nitrobenzene-d5	0.8816		1.00000		88.2	20 - 119			

Matrix Spike (B6H0330-MS1)

Source: 1602748-19

Prepared: 8/10/2016 Analyzed: 8/10/2016

1,4-Dioxane	1.28701	0.20	1.00000	ND	129	49 - 169			
Surrogate: 1,2-Dichlorobenzene-d4	0.5714		1.00000		57.1	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.5927		1.00000		59.3	28 - 122			
Surrogate: 4-Terphenyl-d14	0.7317		1.00000		73.2	43 - 131			
Surrogate: Nitrobenzene-d5	0.6977		1.00000		69.8	20 - 119			

Matrix Spike Dup (B6H0330-MSD1)

Source: 1602748-19

Prepared: 8/10/2016 Analyzed: 8/10/2016

1,4-Dioxane	1.29675	0.20	1.00000	ND	130	49 - 169	0.754	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.7058		1.00000		70.6	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.6898		1.00000		69.0	28 - 122			
Surrogate: 4-Terphenyl-d14	0.7548		1.00000		75.5	43 - 131			
Surrogate: Nitrobenzene-d5	0.8461		1.00000		84.6	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 : 08/12/2016

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.

PROJECT: Raytheon Main

TASK NO.: 532.30

Project Manager Chris Ross

QA Manager Steve Netto

Phone 858.455.6500

Fax 858.455.6533

Sampled By: <u>ASF/d/f</u> <u>TJE/209</u>				SAMPLE COLLECTION		MATRIX		PRESERVATION		CONTAINERS		ANALYSIS REQUESTED				SPECIAL HANDLING			Laboratory	
LAB ID	SAMPLE ID	Date	Time	Groundwater	Lab prepared water	Hydrochloric Acid (HCl)														
1602748-10	MW-39	08/03/16	0955	X																
	↓			X																
	-20 MW-3900		1010	X																
	↓			X																
	-30 MW-310-1SV		1105	X																
	↓			X																
	-40 MW-30		1205	X																
	↓			X																
	-50 MW-31000		1230	X																
	↓			X																
	-60 MW-37		1345	X																
	↓			X																
	-70 MW-30		1440	X																
	↓			X																
	-80 MW-41		1631	X																
	↓			X																
	-90 TB-080310A		0730	X																
Total number of containers per analysis:																			Total No. of Containers: <u>0</u>	
Relinquished By: / Company:		Date / Time		Received By: / Company		Date / Time														
<u>ASF/d/f</u> <u>HFA</u>		<u>8/4/16</u> <u>1150</u>		<u>EW/209</u> <u>ATL</u>		<u>8-4-16</u> <u>11:50</u>														
Relinquished By: / Company:		Date / Time		Received By: / Company		Date / Time														
<u>EW/209</u> <u>ATL</u>		<u>8-4-16</u> <u>1240</u>		<u>FAD/209</u>		<u>8/4/16</u> <u>1240</u>														

ATL
Attn: Rachelle Arada
3275 Walnut Ave
Signal Hill, CA 90755
562-989-4045

24-HR TAT

- ☐ 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 ✗
4. Note applicable preservatives, special instructions, and deviations from typical environmental samples.
5. Consult project QA documents for specific instructions.

16, 12 Temperature on receipt



Page 2 of 2

PROJECT: Raytheon Main

TASK NO.: 532.30
Project Manager Chris Ross

QA Manager Steve Netto

Phone 858.455.6500

Fax 858.455.6533

Sampled By:		SAMPLE COLLECTION		Groundwater	Lab prepared water	Hydrochloric Acid (HCl)			Ice	40-ml VOA	1 L Amber			VOCs by EPA-524.2	1,4-Dioxane by EPA-521.2	1,4-Dioxane by EPA-521.2		Standard TAT	MS	MSD	REMARKS		
LAB ID	SAMPLE ID	Date	Time																				
1502747	MW-23	8/3/16	8:40	X					X	3	1			X	X			X					
-11	MW-34A		9:46	X					X	3	1			X	X			X					
-12	MW-34B		10:13	X					X	3	1			X	X	X		X					
-13	MW-34C		11:32	X					X	3	1			X	X			X					
-14	MW-09		14:04	X					X	3	1			X	X			X					
-15	MW-31		15:17	X					X	3	1			X	X	X		X					
-16	MW-3100		16:19	X					X	3	1			X	X	X		X			24-HR-TAT		
-17	MW-30B		16:11	X					X	3	1			X	X			X					
-18	MW-30A		16:33	X					X	3	1			X	X			X					
-19	MW-40	8/4/16	8:15	X	X				X	3	1			X	X			X	X				
	MW-40	8/4/16	↓	X					X	3	1			X	X			X	X				
-20	MW-4000	8/4/16	8:25	X					X	3	1			X	X			X					
	↓		↓	X														X					
Total number of containers per analysis: 24																						Total No. of Containers: 30	
Relinquished By: / Company:		Date / Time	Received By: / Company		Date / Time																		
F. O. H. H. A.		8/4/16 11:50	G. M. B. ATL		8-4-16 11:50																		
Relinquished By: / Company:		Date / Time	Received By: / Company		Date / Time																		
G. M. B. ATL		8/4/16 12:40	F. O. H. H. A.		8/4/16 12:40																		

☐ 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

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

Send Results to:

Steve Netto

9171 Towne Centre Drive
Suite 375

San Diego, CA 92122

Ph: 858.455.5400

snetto@hargis.com

GROUNDWATER EXTRACTION AND TREATMENT SYSTEM ANALYTICAL RESULTS



June 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 : 1601910

Client Reference : Raytheon Main GETS Monthly Sample, 532.15

Enclosed are the results for sample(s) received on June 01, 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,

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

Eddie Rodriguez
Laboratory Director

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



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 06/13/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-060116	1601910-01	Lab prepared water	6/01/16 7:00	6/01/16 11:04
CEFF	1601910-02	Groundwater	6/01/16 9:17	6/01/16 11:04
CBT	1601910-03	Groundwater	6/01/16 9:25	6/01/16 11:04
POX	1601910-04	Groundwater	6/01/16 9:30	6/01/16 11:04
PF	1601910-05	Groundwater	6/01/16 9:45	6/01/16 11:04
INF	1601910-06	Groundwater	6/01/16 9:52	6/01/16 11:04
EW-02	1601910-07	Groundwater	6/01/16 10:15	6/01/16 11:04
MW-29	1601910-08	Groundwater	6/01/16 10:40	6/01/16 11:04

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 : 06/13/2016

Client Sample ID TB-060116

Lab ID: 1601910-01

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	B6F0001	06/01/2016	06/01/16 16:21	
1,1,1-Trichloroethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,1,2-Trichloroethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,1-Dichloroethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,1-Dichloroethene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,1-Dichloropropene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,2,3-Trichloropropane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,2,3-Trichlorobenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,2,4-Trichlorobenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,2,4-Trimethylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,2-Dibromoethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,2-Dichlorobenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,2-Dichloroethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,2-Dichloropropane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,3,5-Trimethylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,3-Dichlorobenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,3-Dichloropropane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
1,4-Dichlorobenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
2,2-Dichloropropane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
2-Chlorotoluene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
4-Chlorotoluene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
4-Isopropyltoluene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Benzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Bromobenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Bromodichloromethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Bromoform	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Bromomethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Carbon tetrachloride	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Chlorobenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Chloroethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Chloroform	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Chloromethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
cis-1,2-Dichloroethene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
cis-1,3-Dichloropropene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Dibromochloromethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	



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 : 06/13/2016

Client Sample ID TB-060116

Lab ID: 1601910-01

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	B6F0001	06/01/2016	06/01/16 16:21	
Dichlorodifluoromethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Ethylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Hexachlorobutadiene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Isopropylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
m,p-Xylene	ND	1.0	1	B6F0001	06/01/2016	06/01/16 16:21	
Methylene chloride	ND	1.0	1	B6F0001	06/01/2016	06/01/16 16:21	
n-Butylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
n-Propylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Naphthalene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
o-Xylene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
sec-Butylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Styrene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
tert-Butylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Tetrachloroethene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Toluene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
trans-1,2-Dichloroethene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Trichloroethene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Trichlorofluoromethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Vinyl chloride	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:21	
Surrogate: 1,2-Dichloroethane-d4	109 %	51 - 157		B6F0001	06/01/2016	06/01/16 16:21	
Surrogate: 4-Bromofluorobenzene	94.5 %	61 - 123		B6F0001	06/01/2016	06/01/16 16:21	
Surrogate: Dibromofluoromethane	119 %	57 - 147		B6F0001	06/01/2016	06/01/16 16:21	
Surrogate: Toluene-d8	104 %	61 - 119		B6F0001	06/01/2016	06/01/16 16:21	



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 : 06/13/2016

Client Sample ID CEFF

Lab ID: 1601910-02

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	B6F0001	06/01/2016	06/01/16 16:46	
1,1,1-Trichloroethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,1,2-Trichloroethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,1-Dichloroethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,1-Dichloroethene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,1-Dichloropropene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,2,3-Trichloropropane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,2,3-Trichlorobenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,2,4-Trichlorobenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,2,4-Trimethylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,2-Dibromoethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,2-Dichlorobenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,2-Dichloroethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,2-Dichloropropane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,3,5-Trimethylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,3-Dichlorobenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,3-Dichloropropane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
1,4-Dichlorobenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
2,2-Dichloropropane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
2-Chlorotoluene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
4-Chlorotoluene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
4-Isopropyltoluene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Benzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Bromobenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Bromodichloromethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Bromoform	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Bromomethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Carbon tetrachloride	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Chlorobenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Chloroethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Chloroform	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Chloromethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
cis-1,2-Dichloroethene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
cis-1,3-Dichloropropene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Dibromochloromethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	



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 : 06/13/2016

Client Sample ID CEFF

Lab ID: 1601910-02

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	B6F0001	06/01/2016	06/01/16 16:46	
Dichlorodifluoromethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Ethylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Hexachlorobutadiene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Isopropylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
m,p-Xylene	ND	1.0	1	B6F0001	06/01/2016	06/01/16 16:46	
Methylene chloride	ND	1.0	1	B6F0001	06/01/2016	06/01/16 16:46	
n-Butylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
n-Propylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Naphthalene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
o-Xylene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
sec-Butylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Styrene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
tert-Butylbenzene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Tetrachloroethene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Toluene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
trans-1,2-Dichloroethene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Trichloroethene	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Trichlorofluoromethane	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Vinyl chloride	ND	0.50	1	B6F0001	06/01/2016	06/01/16 16:46	
Surrogate: 1,2-Dichloroethane-d4	111 %	51 - 157		B6F0001	06/01/2016	06/01/16 16:46	
Surrogate: 4-Bromofluorobenzene	94.6 %	61 - 123		B6F0001	06/01/2016	06/01/16 16:46	
Surrogate: Dibromofluoromethane	121 %	57 - 147		B6F0001	06/01/2016	06/01/16 16:46	
Surrogate: Toluene-d8	106 %	61 - 119		B6F0001	06/01/2016	06/01/16 16:46	



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 : 06/13/2016

Client Sample ID CEFF

Lab ID: 1601910-02

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	B6F0016	06/01/2016	06/01/16 15:29	
Surrogate: 1,2-Dichlorobenzene-d4	72.7 %	31 - 106		B6F0016	06/01/2016	06/01/16 15:29	
Surrogate: 2-Fluorobiphenyl	82.6 %	28 - 122		B6F0016	06/01/2016	06/01/16 15:29	
Surrogate: 4-Terphenyl-d14	87.1 %	43 - 131		B6F0016	06/01/2016	06/01/16 15:29	
Surrogate: Nitrobenzene-d5	75.7 %	20 - 119		B6F0016	06/01/2016	06/01/16 15:29	



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 : 06/13/2016

Client Sample ID CBT

Lab ID: 1601910-03

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	B6F0041	06/03/2016	06/03/16 15:36	
1,1,1-Trichloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,1,2-Trichloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,1-Dichloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,1-Dichloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,1-Dichloropropene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,2,3-Trichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,2,3-Trichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,2,4-Trichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,2,4-Trimethylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,2-Dibromoethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,2-Dichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,2-Dichloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,2-Dichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,3,5-Trimethylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,3-Dichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,3-Dichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
1,4-Dichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
2,2-Dichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
2-Chlorotoluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
4-Chlorotoluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
4-Isopropyltoluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Benzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Bromobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Bromodichloromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Bromoform	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Bromomethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Carbon tetrachloride	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Chlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Chloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Chloroform	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Chloromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
cis-1,2-Dichloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
cis-1,3-Dichloropropene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Dibromochloromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	



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 : 06/13/2016

Client Sample ID CBT

Lab ID: 1601910-03

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	B6F0041	06/03/2016	06/03/16 15:36	
Dichlorodifluoromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Ethylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Hexachlorobutadiene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Isopropylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
m,p-Xylene	ND	1.0	1	B6F0041	06/03/2016	06/03/16 15:36	
Methylene chloride	ND	1.0	1	B6F0041	06/03/2016	06/03/16 15:36	
n-Butylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
n-Propylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Naphthalene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
o-Xylene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
sec-Butylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Styrene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
tert-Butylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Tetrachloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Toluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
trans-1,2-Dichloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Trichloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Trichlorofluoromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Vinyl chloride	ND	0.50	1	B6F0041	06/03/2016	06/03/16 15:36	
Surrogate: 1,2-Dichloroethane-d4	109 %	51 - 157		B6F0041	06/03/2016	06/03/16 15:36	
Surrogate: 4-Bromofluorobenzene	110 %	61 - 123		B6F0041	06/03/2016	06/03/16 15:36	
Surrogate: Dibromofluoromethane	112 %	57 - 147		B6F0041	06/03/2016	06/03/16 15:36	
Surrogate: Toluene-d8	104 %	61 - 119		B6F0041	06/03/2016	06/03/16 15:36	



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 : 06/13/2016

Client Sample ID CBT

Lab ID: 1601910-03

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	B6F0016	06/01/2016	06/01/16 15:56	
Surrogate: 1,2-Dichlorobenzene-d4	75.4 %	31 - 106		B6F0016	06/01/2016	06/01/16 15:56	
Surrogate: 2-Fluorobiphenyl	85.5 %	28 - 122		B6F0016	06/01/2016	06/01/16 15:56	
Surrogate: 4-Terphenyl-d14	86.4 %	43 - 131		B6F0016	06/01/2016	06/01/16 15:56	
Surrogate: Nitrobenzene-d5	76.0 %	20 - 119		B6F0016	06/01/2016	06/01/16 15:56	



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 : 06/13/2016

Client Sample ID POX

Lab ID: 1601910-04

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)	230	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	
Alkalinity, Total (as CaCO ₃)	230	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	

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	B6F0185	06/07/2016	06/07/16 15:51	

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	B6F0041	06/03/2016	06/03/16 16:25	
1,1,1-Trichloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,1,2-Trichloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,1-Dichloroethane	0.69	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,1-Dichloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,1-Dichloropropene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,2,3-Trichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,2,3-Trichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,2,4-Trichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,2,4-Trimethylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,2-Dibromoethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,2-Dichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,2-Dichloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,2-Dichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,3,5-Trimethylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,3-Dichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,3-Dichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
1,4-Dichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
2,2-Dichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
2-Chlorotoluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	



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 : 06/13/2016

Client Sample ID POX

Lab ID: 1601910-04

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
4-Isopropyltoluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Benzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Bromobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Bromodichloromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Bromoform	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Bromomethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Carbon tetrachloride	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Chlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Chloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Chloroform	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Chloromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
cis-1,2-Dichloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
cis-1,3-Dichloropropene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Dibromochloromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Dibromomethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Dichlorodifluoromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Ethylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Hexachlorobutadiene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Isopropylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
m,p-Xylene	ND	1.0	1	B6F0041	06/03/2016	06/03/16 16:25	
Methylene chloride	ND	1.0	1	B6F0041	06/03/2016	06/03/16 16:25	
n-Butylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
n-Propylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Naphthalene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
o-Xylene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
sec-Butylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Styrene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
tert-Butylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Tetrachloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Toluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
trans-1,2-Dichloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Trichloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Trichlorofluoromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	
Vinyl chloride	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:25	

Surrogate: 1,2-Dichloroethane-d4

109 %

51 - 157

B6F0041

06/03/2016

06/03/16 16:25

Surrogate: 4-Bromofluorobenzene

106 %

61 - 123

B6F0041

06/03/2016

06/03/16 16:25



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 : 06/13/2016

Client Sample ID POX

Lab ID: 1601910-04

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: Dibromofluoromethane	111 %	57 - 147		B6F0041	06/03/2016	06/03/16 16:25	
Surrogate: Toluene-d8	102 %	61 - 119		B6F0041	06/03/2016	06/03/16 16:25	

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	0.20	0.20	1	B6F0016	06/01/2016	06/01/16 16:24	
Surrogate: 1,2-Dichlorobenzene-d4	70.7 %	31 - 106		B6F0016	06/01/2016	06/01/16 16:24	
Surrogate: 2-Fluorobiphenyl	83.1 %	28 - 122		B6F0016	06/01/2016	06/01/16 16:24	
Surrogate: 4-Terphenyl-d14	77.3 %	43 - 131		B6F0016	06/01/2016	06/01/16 16:24	
Surrogate: Nitrobenzene-d5	69.7 %	20 - 119		B6F0016	06/01/2016	06/01/16 16:24	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 06/13/2016

Client Sample ID PF

Lab ID: 1601910-05

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	B6F0181	06/01/2016	06/01/16 18:57	

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)	230	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	
Alkalinity, Total (as CaCO ₃)	230	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	

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	B6F0064	06/02/2016	06/02/16 13:36	

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	B6F0185	06/07/2016	06/07/16 16:07	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 06/13/2016

Client Sample ID INF

Lab ID: 1601910-06

Bromide by Ion Chromatography EPA 300

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.48	0.05	1	B6F0245	06/02/2016	06/02/16 12:53	

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	B6F0041	06/03/2016	06/03/16 17:13	
1,1,1-Trichloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,1,2-Trichloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,1-Dichloroethane	0.95	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,1-Dichloroethene	71	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,1-Dichloropropene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,2,3-Trichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,2,3-Trichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,2,4-Trichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,2,4-Trimethylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,2-Dibromoethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,2-Dichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,2-Dichloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,2-Dichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,3,5-Trimethylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,3-Dichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,3-Dichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
1,4-Dichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
2,2-Dichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
2-Chlorotoluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
4-Chlorotoluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
4-Isopropyltoluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Benzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Bromobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Bromodichloromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Bromoform	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Bromomethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Carbon tetrachloride	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Chlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	



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 : 06/13/2016

Client Sample ID INF

Lab ID: 1601910-06

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Chloroform	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Chloromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
cis-1,2-Dichloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
cis-1,3-Dichloropropene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Dibromochloromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Dibromomethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Dichlorodifluoromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Ethylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Hexachlorobutadiene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Isopropylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
m,p-Xylene	ND	1.0	1	B6F0041	06/03/2016	06/03/16 17:13	
Methylene chloride	ND	1.0	1	B6F0041	06/03/2016	06/03/16 17:13	
n-Butylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
n-Propylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Naphthalene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
o-Xylene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
sec-Butylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Styrene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
tert-Butylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Tetrachloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Toluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
trans-1,2-Dichloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Trichloroethene	0.67	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Trichlorofluoromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
Vinyl chloride	ND	0.50	1	B6F0041	06/03/2016	06/03/16 17:13	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>106 %</i>	<i>51 - 157</i>		B6F0041	06/03/2016	<i>06/03/16 17:13</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>104 %</i>	<i>61 - 123</i>		B6F0041	06/03/2016	<i>06/03/16 17:13</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.5 %</i>	<i>57 - 147</i>		B6F0041	06/03/2016	<i>06/03/16 17:13</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6F0041	06/03/2016	<i>06/03/16 17:13</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 : 06/13/2016

Client Sample ID INF

Lab ID: 1601910-06

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	33	2.0	1	B6F0087	06/03/2016	06/03/16 17:21	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>53.9 %</i>	<i>42 - 106</i>		B6F0087	06/03/2016	<i>06/03/16 17:21</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>61.6 %</i>	<i>55 - 117</i>		B6F0087	06/03/2016	<i>06/03/16 17:21</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>84.6 %</i>	<i>52 - 142</i>		B6F0087	06/03/2016	<i>06/03/16 17:21</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>59.4 %</i>	<i>43 - 116</i>		B6F0087	06/03/2016	<i>06/03/16 17:21</i>	



Certificate of Analysis

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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 : 06/13/2016

Client Sample ID EW-02

Lab ID: 1601910-07

Bromide by Ion Chromatography EPA 300

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.43	0.05	1	B6F0245	06/02/2016	06/02/16 13:05	

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	B6F0041	06/03/2016	06/03/16 16:00	
1,1,1-Trichloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,1,2-Trichloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,1-Dichloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,1-Dichloroethene	31	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,1-Dichloropropene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,2,3-Trichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,2,3-Trichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,2,4-Trichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,2,4-Trimethylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,2-Dibromoethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,2-Dichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,2-Dichloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,2-Dichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,3,5-Trimethylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,3-Dichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,3-Dichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
1,4-Dichlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
2,2-Dichloropropane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
2-Chlorotoluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
4-Chlorotoluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
4-Isopropyltoluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Benzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Bromobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Bromodichloromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Bromoform	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Bromomethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Carbon tetrachloride	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Chlorobenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	



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 : 06/13/2016

Client Sample ID EW-02

Lab ID: 1601910-07

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Chloroform	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Chloromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
cis-1,2-Dichloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
cis-1,3-Dichloropropene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Dibromochloromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Dibromomethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Dichlorodifluoromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Ethylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Hexachlorobutadiene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Isopropylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
m,p-Xylene	ND	1.0	1	B6F0041	06/03/2016	06/03/16 16:00	
Methylene chloride	ND	1.0	1	B6F0041	06/03/2016	06/03/16 16:00	
n-Butylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
n-Propylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Naphthalene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
o-Xylene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
sec-Butylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Styrene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
tert-Butylbenzene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Tetrachloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Toluene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
trans-1,2-Dichloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Trichloroethene	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Trichlorofluoromethane	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Vinyl chloride	ND	0.50	1	B6F0041	06/03/2016	06/03/16 16:00	
Surrogate: 1,2-Dichloroethane-d4	110 %	51 - 157		B6F0041	06/03/2016	06/03/16 16:00	
Surrogate: 4-Bromofluorobenzene	108 %	61 - 123		B6F0041	06/03/2016	06/03/16 16:00	
Surrogate: Dibromofluoromethane	113 %	57 - 147		B6F0041	06/03/2016	06/03/16 16:00	
Surrogate: Toluene-d8	104 %	61 - 119		B6F0041	06/03/2016	06/03/16 16:00	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 06/13/2016

Client Sample ID EW-02

Lab ID: 1601910-07

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	12	2.0	1	B6F0087	06/03/2016	06/03/16 17:49	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>57.4 %</i>	<i>42 - 106</i>		B6F0087	06/03/2016	<i>06/03/16 17:49</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>64.1 %</i>	<i>55 - 117</i>		B6F0087	06/03/2016	<i>06/03/16 17:49</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>86.7 %</i>	<i>52 - 142</i>		B6F0087	06/03/2016	<i>06/03/16 17:49</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>60.9 %</i>	<i>43 - 116</i>		B6F0087	06/03/2016	<i>06/03/16 17:49</i>	



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 06/13/2016

Client Sample ID MW-29

Lab ID: 1601910-08

Bromide by Ion Chromatography EPA 300

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.88	0.05	1	B6F0245	06/02/2016	06/02/16 13:50	

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	B6F0312	06/13/2016	06/13/16 14:09	
1,1,1-Trichloroethane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,1,2-Trichloroethane	1.0	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,1-Dichloroethane	3.5	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,1-Dichloroethene	250	2.5	5	B6F0041	06/03/2016	06/03/16 18:02	
1,1-Dichloropropene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,2,3-Trichloropropane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,2,3-Trichlorobenzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,2,4-Trichlorobenzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,2,4-Trimethylbenzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,2-Dibromoethane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,2-Dichlorobenzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,2-Dichloroethane	0.62	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,2-Dichloropropane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,3,5-Trimethylbenzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,3-Dichlorobenzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,3-Dichloropropane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
1,4-Dichlorobenzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
2,2-Dichloropropane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
2-Chlorotoluene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
4-Chlorotoluene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
4-Isopropyltoluene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Benzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Bromobenzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Bromodichloromethane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Bromoform	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Bromomethane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Carbon tetrachloride	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Chlorobenzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	



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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 : 06/13/2016

Client Sample ID MW-29

Lab ID: 1601910-08

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Chloroform	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Chloromethane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
cis-1,2-Dichloroethene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
cis-1,3-Dichloropropene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Dibromochloromethane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Dibromomethane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Dichlorodifluoromethane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Ethylbenzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Hexachlorobutadiene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Isopropylbenzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
m,p-Xylene	ND	1.0	1	B6F0312	06/13/2016	06/13/16 14:09	
Methylene chloride	ND	1.0	1	B6F0312	06/13/2016	06/13/16 14:09	
n-Butylbenzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
n-Propylbenzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Naphthalene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
o-Xylene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
sec-Butylbenzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Styrene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
tert-Butylbenzene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Tetrachloroethene	0.96	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Toluene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
trans-1,2-Dichloroethene	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Trichloroethene	2.8	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Trichlorofluoromethane	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
Vinyl chloride	ND	0.50	1	B6F0312	06/13/2016	06/13/16 14:09	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>110 %</i>	<i>51 - 157</i>		B6F0041	06/03/2016	<i>06/03/16 18:02</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>109 %</i>	<i>51 - 157</i>		B6F0312	06/13/2016	<i>06/13/16 14:09</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>109 %</i>	<i>61 - 123</i>		B6F0041	06/03/2016	<i>06/03/16 18:02</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>110 %</i>	<i>61 - 123</i>		B6F0312	06/13/2016	<i>06/13/16 14:09</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>115 %</i>	<i>57 - 147</i>		B6F0312	06/13/2016	<i>06/13/16 14:09</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>109 %</i>	<i>57 - 147</i>		B6F0041	06/03/2016	<i>06/03/16 18:02</i>	
<i>Surrogate: Toluene-d8</i>	<i>107 %</i>	<i>61 - 119</i>		B6F0312	06/13/2016	<i>06/13/16 14:09</i>	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>61 - 119</i>		B6F0041	06/03/2016	<i>06/03/16 18:02</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 : 06/13/2016

Client Sample ID MW-29

Lab ID: 1601910-08

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	110	2.0	1	B6F0087	06/03/2016	06/03/16 18:16	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>54.2 %</i>	<i>42 - 106</i>		B6F0087	06/03/2016	<i>06/03/16 18:16</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>63.1 %</i>	<i>55 - 117</i>		B6F0087	06/03/2016	<i>06/03/16 18:16</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>83.6 %</i>	<i>52 - 142</i>		B6F0087	06/03/2016	<i>06/03/16 18:16</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>59.2 %</i>	<i>43 - 116</i>		B6F0087	06/03/2016	<i>06/03/16 18:16</i>	



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Project Number : Raytheon Main GETS Monthly Sample, 5

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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

Batch B6F0179 - No_Prep_WC1_W

Blank (B6F0179-BLK1)

Prepared: 6/8/2016 Analyzed: 6/8/2016

Alkalinity, Bicarbonate (as CaCO₃)
Alkalinity, Carbonate (as CaCO₃)
Alkalinity, Hydroxide (as CaCO₃)
Alkalinity, Total (as CaCO₃)

ND
ND
ND
ND

5.0
5.0
5.0
5.0

NR
NR
NR
NR

LCS (B6F0179-BS1)

Prepared: 6/8/2016 Analyzed: 6/8/2016

Alkalinity, Total (as CaCO₃)

101.090

5.0

99.9580

101

80 - 120

Duplicate (B6F0179-DUP1)

Source: 1601911-03

Prepared: 6/8/2016 Analyzed: 6/8/2016

Alkalinity, Total (as CaCO₃)

215.220

5.0

218.480

NR

1.50

20

Matrix Spike (B6F0179-MS1)

Source: 1601911-03

Prepared: 6/8/2016 Analyzed: 6/8/2016

Alkalinity, Total (as CaCO₃)

410.870

10

199.916

218.480

96.2

80 - 120

Matrix Spike Dup (B6F0179-MSD1)

Source: 1601911-03

Prepared: 6/8/2016 Analyzed: 6/8/2016

Alkalinity, Total (as CaCO₃)

413.040

10

199.916

218.480

97.3

80 - 120

0.527

20



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 06/13/2016

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

Batch B6F0064 - No_Prep_WC1_W

Blank (B6F0064-BLK1)

Prepared: 6/2/2016 Analyzed: 6/2/2016

Residue, Suspended

ND

1.0

NR

LCS (B6F0064-BS1)

Prepared: 6/2/2016 Analyzed: 6/2/2016

Residue, Suspended

92.0000

10

92.1000

99.9

80 - 120

Duplicate (B6F0064-DUP1)

Source: 1601890-01

Prepared: 6/2/2016 Analyzed: 6/2/2016

Residue, Suspended

730.000

33

750.000

NR

2.70

10



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 06/13/2016

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

Batch B6F0245 - No_Prep_IC1_W

Blank (B6F0245-BLK1)

Prepared: 6/2/2016 Analyzed: 6/2/2016

Bromide ND 0.05 NR

LCS (B6F0245-BS1)

Prepared: 6/2/2016 Analyzed: 6/2/2016

Bromide 0.982800 0.05 1.00000 98.3 90 - 110

Duplicate (B6F0245-DUP1)

Source: 1601918-01

Prepared: 6/2/2016 Analyzed: 6/2/2016

Bromide 4.66600 1.0 2.10100 NR 75.8 20

Matrix Spike (B6F0245-MS1)

Source: 1601918-01

Prepared: 6/2/2016 Analyzed: 6/2/2016

Bromide 2.85000 2.50000 0.105050 110 80 - 120

Matrix Spike Dup (B6F0245-MSD1)

Source: 1601918-01

Prepared: 6/2/2016 Analyzed: 6/2/2016

Bromide 2.92810 2.50000 0.105050 113 80 - 120 2.70 20



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 06/13/2016

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 Limit	Notes

Batch B6F0181 - No_Prep_II_W

Blank (B6F0181-BLK1)

Prepared: 6/1/2016 Analyzed: 6/1/2016

UV Absorption	ND	0.01			NR				

Duplicate (B6F0181-DUP1)

Source: 1601910-05

Prepared: 6/1/2016 Analyzed: 6/1/2016

UV Absorption	ND	0.01		ND	NR			20	

Duplicate (B6F0181-DUP2)

Source: 1601911-02

Prepared: 6/1/2016 Analyzed: 6/1/2016

UV Absorption	ND	0.01		ND	NR			20	

Duplicate (B6F0181-DUP3)

Source: 1601911-03

Prepared: 6/1/2016 Analyzed: 6/1/2016

UV Absorption	ND	0.01		ND	NR			20	

Duplicate (B6F0181-DUP4)

Source: 1601911-04

Prepared: 6/1/2016 Analyzed: 6/1/2016

UV Absorption	ND	0.01		ND	NR			20	

Duplicate (B6F0181-DUP5)

Source: 1601911-05

Prepared: 6/1/2016 Analyzed: 6/1/2016

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 : 06/13/2016

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

Batch B6F0185 - No_Prep_II_W

Blank (B6F0185-BLK1)

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

Organic Carbon, Total

ND

3.0

NR

LCS (B6F0185-BS1)

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

Organic Carbon, Total

18.3800

3.0

20.0000

91.9

80 - 120

LCS Dup (B6F0185-BSD1)

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

Organic Carbon, Total

16.8200

3.0

20.0000

84.1

80 - 120

8.86

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 : 06/13/2016

Volatile Organic Compounds by EPA 8260B - Quality Control

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

Batch B6F0001 - MSVOA_LL_W

Blank (B6F0001-BLK1)

Prepared: 6/1/2016 Analyzed: 6/1/2016

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 Monthly Sample, 5

Report To : Steve Netto

Reported : 06/13/2016

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 Limit	Notes

Batch B6F0001 - MSVOA_LL_W (continued)

Blank (B6F0001-BLK1) - Continued

Prepared: 6/1/2016 Analyzed: 6/1/2016

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				

Surrogate: 1,2-Dichloroethane-d4	24.61		25.0000		98.4	51 - 157
Surrogate: 4-Bromofluorobenzene	24.20		25.0000		96.8	61 - 123
Surrogate: Dibromofluoromethane	27.31		25.0000		109	57 - 147
Surrogate: Toluene-d8	25.19		25.0000		101	61 - 119

LCS (B6F0001-BS1)

Prepared: 6/1/2016 Analyzed: 6/1/2016

1,1,1,2-Tetrachloroethane	25.1800	0.50	20.0000		126	76 - 132
1,1,1-Trichloroethane	23.4500	0.50	20.0000		117	72 - 144
1,1,2,2-Tetrachloroethane	20.7300	0.50	20.0000		104	70 - 120
1,1,2-Trichloroethane	20.1300	0.50	20.0000		101	75 - 120
1,1-Dichloroethane	20.8500	0.50	20.0000		104	65 - 127
1,1-Dichloroethene	21.8300	0.50	20.0000		109	63 - 142
1,1-Dichloropropene	23.9600	0.50	20.0000		120	78 - 137
1,2,3-Trichloropropane	19.2100	0.50	20.0000		96.0	73 - 118
1,2,3-Trichlorobenzene	20.6100	0.50	20.0000		103	53 - 164
1,2,4-Trichlorobenzene	20.4900	0.50	20.0000		102	58 - 144
1,2,4-Trimethylbenzene	22.4100	0.50	20.0000		112	75 - 140
1,2-Dibromo-3-chloropropane	17.0900	0.50	20.0000		85.4	61 - 131
1,2-Dibromoethane	20.8400	0.50	20.0000		104	74 - 125
1,2-Dichlorobenzene	22.1500	0.50	20.0000		111	78 - 122
1,2-Dichloroethane	18.8200	0.50	20.0000		94.1	70 - 126
1,2-Dichloropropane	19.2200	0.50	20.0000		96.1	69 - 120
1,3,5-Trimethylbenzene	23.0900	0.50	20.0000		115	73 - 145
1,3-Dichlorobenzene	22.3900	0.50	20.0000		112	76 - 126
1,3-Dichloropropane	18.9200	0.50	20.0000		94.6	76 - 117



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Project Number : Raytheon Main GETS Monthly Sample, 5

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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

Batch B6F0001 - MSVOA_LL_W (continued)

LCS (B6F0001-BS1) - Continued

Prepared: 6/1/2016 Analyzed: 6/1/2016

1,4-Dichlorobenzene	22.5000	0.50	20.0000		112	77 - 120			
2,2-Dichloropropane	24.3800	0.50	20.0000		122	47 - 169			
2-Chlorotoluene	22.2800	0.50	20.0000		111	75 - 135			
4-Chlorotoluene	22.3800	0.50	20.0000		112	70 - 133			
4-Isopropyltoluene	23.4100	0.50	20.0000		117	72 - 153			
Benzene	43.2000	0.50	40.0000		108	73 - 123			
Bromobenzene	21.8400	0.50	20.0000		109	75 - 121			
Bromodichloromethane	20.7300	0.50	20.0000		104	73 - 124			
Bromoform	20.7300	0.50	20.0000		104	70 - 135			
Bromomethane	19.1100	0.50	20.0000		95.6	10 - 166			
Carbon tetrachloride	23.7900	0.50	20.0000		119	65 - 171			
Chlorobenzene	21.8700	0.50	20.0000		109	80 - 121			
Chloroethane	18.6300	0.50	20.0000		93.2	55 - 143			
Chloroform	20.1900	0.50	20.0000		101	65 - 130			
Chloromethane	22.6400	0.50	20.0000		113	21 - 141			
cis-1,2-Dichloroethene	20.5800	0.50	20.0000		103	64 - 126			
cis-1,3-Dichloropropene	24.4500	0.50	20.0000		122	70 - 131			
Dibromochloromethane	22.2700	0.50	20.0000		111	74 - 125			
Dibromomethane	19.5100	0.50	20.0000		97.6	74 - 116			
Dichlorodifluoromethane	15.8500	0.50	20.0000		79.2	40 - 186			
Ethylbenzene	41.9200	0.50	40.0000		105	77 - 130			
Hexachlorobutadiene	21.5000	0.50	20.0000		108	52 - 176			
Isopropylbenzene	24.7400	0.50	20.0000		124	77 - 144			
m,p-Xylene	44.2900	1.0	40.0000		111	84 - 136			
Methylene chloride	17.1900	1.0	20.0000		86.0	72 - 150			
n-Butylbenzene	22.8800	0.50	20.0000		114	73 - 154			
n-Propylbenzene	23.5100	0.50	20.0000		118	77 - 145			
Naphthalene	18.8900	0.50	20.0000		94.4	55 - 137			
o-Xylene	42.5300	0.50	40.0000		106	79 - 135			
sec-Butylbenzene	23.7600	0.50	20.0000		119	73 - 157			
Styrene	22.4300	0.50	20.0000		112	78 - 125			
tert-Butylbenzene	23.5200	0.50	20.0000		118	78 - 149			
Tetrachloroethene	22.9400	0.50	20.0000		115	74 - 136			
Toluene	44.1600	0.50	40.0000		110	78 - 124			
trans-1,2-Dichloroethene	21.4900	0.50	20.0000		107	66 - 131			
Trichloroethene	20.9800	0.50	20.0000		105	78 - 128			
Trichlorofluoromethane	22.6000	0.50	20.0000		113	60 - 170			
Vinyl chloride	20.2400	0.50	20.0000		101	55 - 148			

Surrogate: 1,2-Dichloroethane-d4 22.01 25.0000 88.0 51 - 157

Surrogate: 4-Bromofluorobenzene 24.67 25.0000 98.7 61 - 123

Surrogate: Dibromofluoromethane 24.74 25.0000 99.0 57 - 147



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Hargis & Associates, Inc.

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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 06/13/2016

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 Limit	Notes

Batch B6F0001 - MSVOA_LL_W (continued)

LCS (B6F0001-BS1) - Continued

Prepared: 6/1/2016 Analyzed: 6/1/2016

Surrogate: Toluene-d8 25.93 25.0000 104 61 - 119

LCS Dup (B6F0001-BS1)

Prepared: 6/1/2016 Analyzed: 6/1/2016

1,1,1,2-Tetrachloroethane	26.3300	0.50	20.0000	132	76 - 132	4.47	20
1,1,1-Trichloroethane	24.8100	0.50	20.0000	124	72 - 144	5.64	20
1,1,2,2-Tetrachloroethane	22.2300	0.50	20.0000	111	70 - 120	6.98	20
1,1,2-Trichloroethane	21.4400	0.50	20.0000	107	75 - 120	6.30	20
1,1-Dichloroethane	22.3900	0.50	20.0000	112	65 - 127	7.12	20
1,1-Dichloroethene	23.5700	0.50	20.0000	118	63 - 142	7.67	20
1,1-Dichloropropene	25.2500	0.50	20.0000	126	78 - 137	5.24	20
1,2,3-Trichloropropane	20.1900	0.50	20.0000	101	73 - 118	4.97	20
1,2,3-Trichlorobenzene	21.9100	0.50	20.0000	110	53 - 164	6.11	20
1,2,4-Trichlorobenzene	21.9500	0.50	20.0000	110	58 - 144	6.88	20
1,2,4-Trimethylbenzene	23.3900	0.50	20.0000	117	75 - 140	4.28	20
1,2-Dibromo-3-chloropropane	18.3400	0.50	20.0000	91.7	61 - 131	7.06	20
1,2-Dibromoethane	22.4900	0.50	20.0000	112	74 - 125	7.62	20
1,2-Dichlorobenzene	23.1500	0.50	20.0000	116	78 - 122	4.42	20
1,2-Dichloroethane	20.2600	0.50	20.0000	101	70 - 126	7.37	20
1,2-Dichloropropane	20.5400	0.50	20.0000	103	69 - 120	6.64	20
1,3,5-Trimethylbenzene	24.3000	0.50	20.0000	122	73 - 145	5.11	20
1,3-Dichlorobenzene	23.4500	0.50	20.0000	117	76 - 126	4.62	20
1,3-Dichloropropane	20.2300	0.50	20.0000	101	76 - 117	6.69	20
1,4-Dichlorobenzene	23.4300	0.50	20.0000	117	77 - 120	4.05	20
2,2-Dichloropropane	24.9700	0.50	20.0000	125	47 - 169	2.39	20
2-Chlorotoluene	23.1000	0.50	20.0000	116	75 - 135	3.61	20
4-Chlorotoluene	23.0300	0.50	20.0000	115	70 - 133	2.86	20
4-Isopropyltoluene	24.4300	0.50	20.0000	122	72 - 153	4.26	20
Benzene	45.7100	0.50	40.0000	114	73 - 123	5.65	20
Bromobenzene	22.4700	0.50	20.0000	112	75 - 121	2.84	20
Bromodichloromethane	22.0400	0.50	20.0000	110	73 - 124	6.13	20
Bromoform	22.1600	0.50	20.0000	111	70 - 135	6.67	20
Bromomethane	21.3600	0.50	20.0000	107	10 - 166	11.1	20
Carbon tetrachloride	25.6500	0.50	20.0000	128	65 - 171	7.52	20
Chlorobenzene	23.5500	0.50	20.0000	118	80 - 121	7.40	20
Chloroethane	19.5000	0.50	20.0000	97.5	55 - 143	4.56	20
Chloroform	21.3000	0.50	20.0000	106	65 - 130	5.35	20
Chloromethane	24.1500	0.50	20.0000	121	21 - 141	6.45	20
cis-1,2-Dichloroethene	22.0700	0.50	20.0000	110	64 - 126	6.99	20
cis-1,3-Dichloropropene	25.9800	0.50	20.0000	130	70 - 131	6.07	20
Dibromochloromethane	23.8700	0.50	20.0000	119	74 - 125	6.94	20
Dibromomethane	20.9300	0.50	20.0000	105	74 - 116	7.02	20
Dichlorodifluoromethane	16.5500	0.50	20.0000	82.8	40 - 186	4.32	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

Batch B6F0001 - MSVOA_LL_W (continued)

LCS Dup (B6F0001-BSD1) - Continued

Prepared: 6/1/2016 Analyzed: 6/1/2016

Ethylbenzene	44.5600	0.50	40.0000		111	77 - 130	6.11	20	
Hexachlorobutadiene	22.3100	0.50	20.0000		112	52 - 176	3.70	20	
Isopropylbenzene	25.4300	0.50	20.0000		127	77 - 144	2.75	20	
m,p-Xylene	47.1400	1.0	40.0000		118	84 - 136	6.23	20	
Methylene chloride	18.3800	1.0	20.0000		91.9	72 - 150	6.69	20	
n-Butylbenzene	23.8600	0.50	20.0000		119	73 - 154	4.19	20	
n-Propylbenzene	24.2000	0.50	20.0000		121	77 - 145	2.89	20	
Naphthalene	20.4300	0.50	20.0000		102	55 - 137	7.83	20	
o-Xylene	45.0500	0.50	40.0000		113	79 - 135	5.75	20	
sec-Butylbenzene	24.7700	0.50	20.0000		124	73 - 157	4.16	20	
Styrene	24.1700	0.50	20.0000		121	78 - 125	7.47	20	
tert-Butylbenzene	24.5000	0.50	20.0000		122	78 - 149	4.08	20	
Tetrachloroethene	24.2500	0.50	20.0000		121	74 - 136	5.55	20	
Toluene	46.1700	0.50	40.0000		115	78 - 124	4.45	20	
trans-1,2-Dichloroethene	22.8000	0.50	20.0000		114	66 - 131	5.92	20	
Trichloroethene	22.1300	0.50	20.0000		111	78 - 128	5.34	20	
Trichlorofluoromethane	23.3800	0.50	20.0000		117	60 - 170	3.39	20	
Vinyl chloride	21.4400	0.50	20.0000		107	55 - 148	5.76	20	
Surrogate: 1,2-Dichloroethane-d4	22.31		25.0000		89.2	51 - 157			
Surrogate: 4-Bromofluorobenzene	24.71		25.0000		98.8	61 - 123			
Surrogate: Dibromofluoromethane	24.94		25.0000		99.8	57 - 147			
Surrogate: Toluene-d8	25.88		25.0000		104	61 - 119			



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Project Number : Raytheon Main GETS Monthly Sample, 5

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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 Limit	Notes

Batch B6F0041 - MSVOA_LL_W

Blank (B6F0041-BLK1)

Prepared: 6/3/2016 Analyzed: 6/3/2016

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 Limit	Notes

Batch B6F0041 - MSVOA_LL_W (continued)

Blank (B6F0041-BLK1) - Continued

Prepared: 6/3/2016 Analyzed: 6/3/2016

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			

Surrogate: 1,2-Dichloroethane-d4	24.79		25.0000		99.2	51 - 157
Surrogate: 4-Bromofluorobenzene	27.44		25.0000		110	61 - 123
Surrogate: Dibromofluoromethane	24.91		25.0000		99.6	57 - 147
Surrogate: Toluene-d8	25.58		25.0000		102	61 - 119

LCS (B6F0041-BS1)

Prepared: 6/3/2016 Analyzed: 6/3/2016

1,1,1,2-Tetrachloroethane	19.3400	0.50	20.0000		96.7	76 - 132
1,1,1-Trichloroethane	18.9200	0.50	20.0000		94.6	72 - 144
1,1,2,2-Tetrachloroethane	16.1700	0.50	20.0000		80.8	70 - 120
1,1,2-Trichloroethane	16.3400	0.50	20.0000		81.7	75 - 120
1,1-Dichloroethane	18.3600	0.50	20.0000		91.8	65 - 127
1,1-Dichloroethene	18.7000	0.50	20.0000		93.5	63 - 142
1,1-Dichloropropene	21.8300	0.50	20.0000		109	78 - 137
1,2,3-Trichloropropane	16.0300	0.50	20.0000		80.2	73 - 118
1,2,3-Trichlorobenzene	20.9100	0.50	20.0000		105	53 - 164
1,2,4-Trichlorobenzene	19.6900	0.50	20.0000		98.4	58 - 144
1,2,4-Trimethylbenzene	22.1700	0.50	20.0000		111	75 - 140
1,2-Dibromo-3-chloropropane	17.5700	0.50	20.0000		87.8	61 - 131
1,2-Dibromoethane	17.0200	0.50	20.0000		85.1	74 - 125
1,2-Dichlorobenzene	19.5800	0.50	20.0000		97.9	78 - 122
1,2-Dichloroethane	16.5800	0.50	20.0000		82.9	70 - 126
1,2-Dichloropropane	17.9000	0.50	20.0000		89.5	69 - 120
1,3,5-Trimethylbenzene	22.3900	0.50	20.0000		112	73 - 145
1,3-Dichlorobenzene	20.2200	0.50	20.0000		101	76 - 126
1,3-Dichloropropane	18.0100	0.50	20.0000		90.0	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 Limit	Notes

Batch B6F0041 - MSVOA_LL_W (continued)

LCS (B6F0041-BS1) - Continued

Prepared: 6/3/2016 Analyzed: 6/3/2016

1,4-Dichlorobenzene	19.0500	0.50	20.0000		95.2	77 - 120			
2,2-Dichloropropane	19.6900	0.50	20.0000		98.4	47 - 169			
2-Chlorotoluene	21.9600	0.50	20.0000		110	75 - 135			
4-Chlorotoluene	22.0800	0.50	20.0000		110	70 - 133			
4-Isopropyltoluene	22.7100	0.50	20.0000		114	72 - 153			
Benzene	39.1700	0.50	40.0000		97.9	73 - 123			
Bromobenzene	19.9000	0.50	20.0000		99.5	75 - 121			
Bromodichloromethane	17.9200	0.50	20.0000		89.6	73 - 124			
Bromoform	17.8700	0.50	20.0000		89.4	70 - 135			
Bromomethane	23.0400	0.50	20.0000		115	10 - 166			
Carbon tetrachloride	20.0800	0.50	20.0000		100	65 - 171			
Chlorobenzene	19.1400	0.50	20.0000		95.7	80 - 121			
Chloroethane	20.6400	0.50	20.0000		103	55 - 143			
Chloroform	17.3300	0.50	20.0000		86.6	65 - 130			
Chloromethane	18.2400	0.50	20.0000		91.2	21 - 141			
cis-1,2-Dichloroethene	17.5000	0.50	20.0000		87.5	64 - 126			
cis-1,3-Dichloropropene	20.1200	0.50	20.0000		101	70 - 131			
Dibromochloromethane	18.3100	0.50	20.0000		91.6	74 - 125			
Dibromomethane	16.7500	0.50	20.0000		83.8	74 - 116			
Dichlorodifluoromethane	18.3900	0.50	20.0000		92.0	40 - 186			
Ethylbenzene	40.4600	0.50	40.0000		101	77 - 130			
Hexachlorobutadiene	21.5900	0.50	20.0000		108	52 - 176			
Isopropylbenzene	24.3200	0.50	20.0000		122	77 - 144			
m,p-Xylene	44.4000	1.0	40.0000		111	84 - 136			
Methylene chloride	16.1300	1.0	20.0000		80.6	72 - 150			
n-Butylbenzene	23.8000	0.50	20.0000		119	73 - 154			
n-Propylbenzene	23.3100	0.50	20.0000		117	77 - 145			
Naphthalene	18.5100	0.50	20.0000		92.6	55 - 137			
o-Xylene	43.3800	0.50	40.0000		108	79 - 135			
sec-Butylbenzene	23.0500	0.50	20.0000		115	73 - 157			
Styrene	20.7100	0.50	20.0000		104	78 - 125			
tert-Butylbenzene	22.3900	0.50	20.0000		112	78 - 149			
Tetrachloroethene	20.6000	0.50	20.0000		103	74 - 136			
Toluene	39.6000	0.50	40.0000		99.0	78 - 124			
trans-1,2-Dichloroethene	17.7100	0.50	20.0000		88.6	66 - 131			
Trichloroethene	19.7400	0.50	20.0000		98.7	78 - 128			
Trichlorofluoromethane	21.3300	0.50	20.0000		107	60 - 170			
Vinyl chloride	19.1700	0.50	20.0000		95.8	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	22.47		25.0000		89.9	51 - 157			
Surrogate: 4-Bromofluorobenzene	28.43		25.0000		114	61 - 123			
Surrogate: Dibromofluoromethane	23.72		25.0000		94.9	57 - 147			



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 : 06/13/2016

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 Limit	Notes

Batch B6F0041 - MSVOA_LL_W (continued)

LCS (B6F0041-BS1) - Continued

Prepared: 6/3/2016 Analyzed: 6/3/2016

Surrogate: Toluene-d8 26.76 25.0000 107 61 - 119

LCS Dup (B6F0041-BS1)

Prepared: 6/3/2016 Analyzed: 6/3/2016

1,1,1,2-Tetrachloroethane	18.5600	0.50	20.0000	92.8	76 - 132	4.12	20
1,1,1-Trichloroethane	18.2100	0.50	20.0000	91.0	72 - 144	3.82	20
1,1,2,2-Tetrachloroethane	16.2000	0.50	20.0000	81.0	70 - 120	0.185	20
1,1,2-Trichloroethane	16.0100	0.50	20.0000	80.0	75 - 120	2.04	20
1,1-Dichloroethane	17.8400	0.50	20.0000	89.2	65 - 127	2.87	20
1,1-Dichloroethene	18.3100	0.50	20.0000	91.6	63 - 142	2.11	20
1,1-Dichloropropene	20.7500	0.50	20.0000	104	78 - 137	5.07	20
1,2,3-Trichloropropane	16.3300	0.50	20.0000	81.6	73 - 118	1.85	20
1,2,3-Trichlorobenzene	20.7300	0.50	20.0000	104	53 - 164	0.865	20
1,2,4-Trichlorobenzene	19.3700	0.50	20.0000	96.8	58 - 144	1.64	20
1,2,4-Trimethylbenzene	21.6500	0.50	20.0000	108	75 - 140	2.37	20
1,2-Dibromo-3-chloropropane	17.9700	0.50	20.0000	89.8	61 - 131	2.25	20
1,2-Dibromoethane	16.8300	0.50	20.0000	84.2	74 - 125	1.12	20
1,2-Dichlorobenzene	19.3400	0.50	20.0000	96.7	78 - 122	1.23	20
1,2-Dichloroethane	16.3900	0.50	20.0000	82.0	70 - 126	1.15	20
1,2-Dichloropropane	17.4700	0.50	20.0000	87.4	69 - 120	2.43	20
1,3,5-Trimethylbenzene	21.8700	0.50	20.0000	109	73 - 145	2.35	20
1,3-Dichlorobenzene	19.6200	0.50	20.0000	98.1	76 - 126	3.01	20
1,3-Dichloropropane	17.7200	0.50	20.0000	88.6	76 - 117	1.62	20
1,4-Dichlorobenzene	18.6800	0.50	20.0000	93.4	77 - 120	1.96	20
2,2-Dichloropropane	18.6300	0.50	20.0000	93.2	47 - 169	5.53	20
2-Chlorotoluene	21.3600	0.50	20.0000	107	75 - 135	2.77	20
4-Chlorotoluene	21.4800	0.50	20.0000	107	70 - 133	2.75	20
4-Isopropyltoluene	21.9000	0.50	20.0000	110	72 - 153	3.63	20
Benzene	37.9900	0.50	40.0000	95.0	73 - 123	3.06	20
Bromobenzene	19.4400	0.50	20.0000	97.2	75 - 121	2.34	20
Bromodichloromethane	17.2500	0.50	20.0000	86.2	73 - 124	3.81	20
Bromoform	17.2700	0.50	20.0000	86.4	70 - 135	3.41	20
Bromomethane	23.0000	0.50	20.0000	115	10 - 166	0.174	20
Carbon tetrachloride	18.9300	0.50	20.0000	94.6	65 - 171	5.90	20
Chlorobenzene	18.5100	0.50	20.0000	92.6	80 - 121	3.35	20
Chloroethane	19.4500	0.50	20.0000	97.2	55 - 143	5.94	20
Chloroform	16.8900	0.50	20.0000	84.4	65 - 130	2.57	20
Chloromethane	17.6200	0.50	20.0000	88.1	21 - 141	3.46	20
cis-1,2-Dichloroethene	16.8800	0.50	20.0000	84.4	64 - 126	3.61	20
cis-1,3-Dichloropropene	19.5700	0.50	20.0000	97.8	70 - 131	2.77	20
Dibromochloromethane	17.6200	0.50	20.0000	88.1	74 - 125	3.84	20
Dibromomethane	16.6200	0.50	20.0000	83.1	74 - 116	0.779	20
Dichlorodifluoromethane	17.8500	0.50	20.0000	89.2	40 - 186	2.98	20



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Report To : Steve Netto

Reported : 06/13/2016

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 Limit	Notes
Batch B6F0041 - MSVOA_LL_W (continued)									
LCS Dup (B6F0041-BSD1) - Continued				Prepared: 6/3/2016 Analyzed: 6/3/2016					
Ethylbenzene	39.0200	0.50	40.0000		97.6	77 - 130	3.62	20	
Hexachlorobutadiene	21.0400	0.50	20.0000		105	52 - 176	2.58	20	
Isopropylbenzene	23.5500	0.50	20.0000		118	77 - 144	3.22	20	
m,p-Xylene	42.8300	1.0	40.0000		107	84 - 136	3.60	20	
Methylene chloride	15.7500	1.0	20.0000		78.8	72 - 150	2.38	20	
n-Butylbenzene	23.0100	0.50	20.0000		115	73 - 154	3.38	20	
n-Propylbenzene	22.6200	0.50	20.0000		113	77 - 145	3.00	20	
Naphthalene	18.7200	0.50	20.0000		93.6	55 - 137	1.13	20	
o-Xylene	42.1200	0.50	40.0000		105	79 - 135	2.95	20	
sec-Butylbenzene	22.2400	0.50	20.0000		111	73 - 157	3.58	20	
Styrene	20.2200	0.50	20.0000		101	78 - 125	2.39	20	
tert-Butylbenzene	21.5200	0.50	20.0000		108	78 - 149	3.96	20	
Tetrachloroethene	19.8900	0.50	20.0000		99.4	74 - 136	3.51	20	
Toluene	38.4500	0.50	40.0000		96.1	78 - 124	2.95	20	
trans-1,2-Dichloroethene	17.0100	0.50	20.0000		85.0	66 - 131	4.03	20	
Trichloroethene	19.5500	0.50	20.0000		97.8	78 - 128	0.967	20	
Trichlorofluoromethane	20.7600	0.50	20.0000		104	60 - 170	2.71	20	
Vinyl chloride	18.4300	0.50	20.0000		92.2	55 - 148	3.94	20	
Surrogate: 1,2-Dichloroethane-d4	23.04		25.0000		92.2	51 - 157			
Surrogate: 4-Bromofluorobenzene	28.44		25.0000		114	61 - 123			
Surrogate: Dibromofluoromethane	24.08		25.0000		96.3	57 - 147			
Surrogate: Toluene-d8	27.05		25.0000		108	61 - 119			



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 06/13/2016

Volatile Organic Compounds by EPA 8260B - Quality Control

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

Batch B6F0312 - MSVOA_LL_W

Blank (B6F0312-BLK1)

Prepared: 6/13/2016 Analyzed: 6/13/2016

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 Limit	Notes

Batch B6F0312 - MSVOA_LL_W (continued)

Blank (B6F0312-BLK1) - Continued

Prepared: 6/13/2016 Analyzed: 6/13/2016

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				

Surrogate: 1,2-Dichloroethane-d4	26.34		25.0000		105	51 - 157			
Surrogate: 4-Bromofluorobenzene	28.19		25.0000		113	61 - 123			
Surrogate: Dibromofluoromethane	28.09		25.0000		112	57 - 147			
Surrogate: Toluene-d8	26.59		25.0000		106	61 - 119			

LCS (B6F0312-BS1)

Prepared: 6/13/2016 Analyzed: 6/13/2016

1,1,1,2-Tetrachloroethane	17.7600	0.50	20.0000		88.8	76 - 132			
1,1,1-Trichloroethane	18.0600	0.50	20.0000		90.3	72 - 144			
1,1,2,2-Tetrachloroethane	14.9800	0.50	20.0000		74.9	70 - 120			
1,1,2-Trichloroethane	14.8400	0.50	20.0000		74.2	75 - 120			L4
1,1-Dichloroethane	17.9700	0.50	20.0000		89.8	65 - 127			
1,1-Dichloroethene	19.1600	0.50	20.0000		95.8	63 - 142			
1,1-Dichloropropene	20.1300	0.50	20.0000		101	78 - 137			
1,2,3-Trichloropropane	14.2600	0.50	20.0000		71.3	73 - 118			L4
1,2,3-Trichlorobenzene	18.1400	0.50	20.0000		90.7	53 - 164			
1,2,4-Trichlorobenzene	17.1100	0.50	20.0000		85.6	58 - 144			
1,2,4-Trimethylbenzene	19.6100	0.50	20.0000		98.0	75 - 140			
1,2-Dibromo-3-chloropropane	15.3100	0.50	20.0000		76.6	61 - 131			
1,2-Dibromoethane	15.4400	0.50	20.0000		77.2	74 - 125			
1,2-Dichlorobenzene	17.5000	0.50	20.0000		87.5	78 - 122			
1,2-Dichloroethane	15.2900	0.50	20.0000		76.4	70 - 126			
1,2-Dichloropropane	16.1800	0.50	20.0000		80.9	69 - 120			
1,3,5-Trimethylbenzene	20.2900	0.50	20.0000		101	73 - 145			
1,3-Dichlorobenzene	18.3500	0.50	20.0000		91.8	76 - 126			
1,3-Dichloropropane	16.1100	0.50	20.0000		80.6	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 Limit	Notes

Batch B6F0312 - MSVOA_LL_W (continued)

LCS (B6F0312-BS1) - Continued

Prepared: 6/13/2016 Analyzed: 6/13/2016

1,4-Dichlorobenzene	17.4400	0.50	20.0000		87.2	77 - 120			
2,2-Dichloropropane	19.0100	0.50	20.0000		95.0	47 - 169			
2-Chlorotoluene	19.7000	0.50	20.0000		98.5	75 - 135			
4-Chlorotoluene	19.8500	0.50	20.0000		99.2	70 - 133			
4-Isopropyltoluene	19.8300	0.50	20.0000		99.2	72 - 153			
Benzene	36.9600	0.50	40.0000		92.4	73 - 123			
Bromobenzene	17.4000	0.50	20.0000		87.0	75 - 121			
Bromodichloromethane	16.4400	0.50	20.0000		82.2	73 - 124			
Bromoform	15.7100	0.50	20.0000		78.6	70 - 135			
Bromomethane	21.2200	0.50	20.0000		106	10 - 166			
Carbon tetrachloride	21.6300	0.50	20.0000		108	65 - 171			
Chlorobenzene	17.7100	0.50	20.0000		88.6	80 - 121			
Chloroethane	21.9200	0.50	20.0000		110	55 - 143			
Chloroform	17.0900	0.50	20.0000		85.4	65 - 130			
Chloromethane	23.0000	0.50	20.0000		115	21 - 141			
cis-1,2-Dichloroethene	17.6200	0.50	20.0000		88.1	64 - 126			
cis-1,3-Dichloropropene	18.2100	0.50	20.0000		91.0	70 - 131			
Dibromochloromethane	16.3200	0.50	20.0000		81.6	74 - 125			
Dibromomethane	15.3400	0.50	20.0000		76.7	74 - 116			
Dichlorodifluoromethane	22.8800	0.50	20.0000		114	40 - 186			
Ethylbenzene	37.7600	0.50	40.0000		94.4	77 - 130			
Hexachlorobutadiene	18.2700	0.50	20.0000		91.4	52 - 176			
Isopropylbenzene	21.4900	0.50	20.0000		107	77 - 144			
m,p-Xylene	41.0200	1.0	40.0000		103	84 - 136			
Methylene chloride	16.6600	1.0	20.0000		83.3	72 - 150			
n-Butylbenzene	20.7100	0.50	20.0000		104	73 - 154			
n-Propylbenzene	21.0800	0.50	20.0000		105	77 - 145			
Naphthalene	15.0500	0.50	20.0000		75.2	55 - 137			
o-Xylene	39.9600	0.50	40.0000		99.9	79 - 135			
sec-Butylbenzene	20.7800	0.50	20.0000		104	73 - 157			
Styrene	18.7700	0.50	20.0000		93.8	78 - 125			
tert-Butylbenzene	19.8300	0.50	20.0000		99.2	78 - 149			
Tetrachloroethene	18.8900	0.50	20.0000		94.4	74 - 136			
Toluene	37.5200	0.50	40.0000		93.8	78 - 124			
trans-1,2-Dichloroethene	18.1000	0.50	20.0000		90.5	66 - 131			
Trichloroethene	17.6100	0.50	20.0000		88.0	78 - 128			
Trichlorofluoromethane	22.7100	0.50	20.0000		114	60 - 170			
Vinyl chloride	20.7600	0.50	20.0000		104	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	22.96		25.0000		91.8	51 - 157			
Surrogate: 4-Bromofluorobenzene	28.76		25.0000		115	61 - 123			
Surrogate: Dibromofluoromethane	25.21		25.0000		101	57 - 147			



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Report To : Steve Netto

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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

Batch B6F0312 - MSVOA_LL_W (continued)

LCS (B6F0312-BS1) - Continued

Prepared: 6/13/2016 Analyzed: 6/13/2016

Surrogate: Toluene-d8 27.78 25.0000 111 61 - 119

LCS Dup (B6F0312-BS1)

Prepared: 6/13/2016 Analyzed: 6/13/2016

1,1,1,2-Tetrachloroethane	18.4300	0.50	20.0000	92.2	76 - 132	3.70	20
1,1,1-Trichloroethane	18.4300	0.50	20.0000	92.2	72 - 144	2.03	20
1,1,2,2-Tetrachloroethane	16.7800	0.50	20.0000	83.9	70 - 120	11.3	20
1,1,2-Trichloroethane	16.0200	0.50	20.0000	80.1	75 - 120	7.65	20
1,1-Dichloroethane	18.1300	0.50	20.0000	90.6	65 - 127	0.886	20
1,1-Dichloroethene	19.5100	0.50	20.0000	97.6	63 - 142	1.81	20
1,1-Dichloropropene	20.6700	0.50	20.0000	103	78 - 137	2.65	20
1,2,3-Trichloropropane	15.6700	0.50	20.0000	78.4	73 - 118	9.42	20
1,2,3-Trichlorobenzene	18.7500	0.50	20.0000	93.8	53 - 164	3.31	20
1,2,4-Trichlorobenzene	17.6600	0.50	20.0000	88.3	58 - 144	3.16	20
1,2,4-Trimethylbenzene	20.0400	0.50	20.0000	100	75 - 140	2.17	20
1,2-Dibromo-3-chloropropane	17.6400	0.50	20.0000	88.2	61 - 131	14.1	20
1,2-Dibromoethane	16.3000	0.50	20.0000	81.5	74 - 125	5.42	20
1,2-Dichlorobenzene	18.3700	0.50	20.0000	91.8	78 - 122	4.85	20
1,2-Dichloroethane	16.0000	0.50	20.0000	80.0	70 - 126	4.54	20
1,2-Dichloropropane	16.7700	0.50	20.0000	83.8	69 - 120	3.58	20
1,3,5-Trimethylbenzene	20.7900	0.50	20.0000	104	73 - 145	2.43	20
1,3-Dichlorobenzene	18.9500	0.50	20.0000	94.8	76 - 126	3.22	20
1,3-Dichloropropane	17.1000	0.50	20.0000	85.5	76 - 117	5.96	20
1,4-Dichlorobenzene	18.0600	0.50	20.0000	90.3	77 - 120	3.49	20
2,2-Dichloropropane	19.1200	0.50	20.0000	95.6	47 - 169	0.577	20
2-Chlorotoluene	20.3900	0.50	20.0000	102	75 - 135	3.44	20
4-Chlorotoluene	20.4300	0.50	20.0000	102	70 - 133	2.88	20
4-Isopropyltoluene	20.0500	0.50	20.0000	100	72 - 153	1.10	20
Benzene	37.7300	0.50	40.0000	94.3	73 - 123	2.06	20
Bromobenzene	18.3800	0.50	20.0000	91.9	75 - 121	5.48	20
Bromodichloromethane	17.1000	0.50	20.0000	85.5	73 - 124	3.94	20
Bromoform	17.2000	0.50	20.0000	86.0	70 - 135	9.06	20
Bromomethane	21.5000	0.50	20.0000	108	10 - 166	1.31	20
Carbon tetrachloride	20.3800	0.50	20.0000	102	65 - 171	5.95	20
Chlorobenzene	18.0300	0.50	20.0000	90.2	80 - 121	1.79	20
Chloroethane	21.3000	0.50	20.0000	106	55 - 143	2.87	20
Chloroform	17.4000	0.50	20.0000	87.0	65 - 130	1.80	20
Chloromethane	22.3000	0.50	20.0000	112	21 - 141	3.09	20
cis-1,2-Dichloroethene	18.1800	0.50	20.0000	90.9	64 - 126	3.13	20
cis-1,3-Dichloropropene	19.1100	0.50	20.0000	95.6	70 - 131	4.82	20
Dibromochloromethane	17.4200	0.50	20.0000	87.1	74 - 125	6.52	20
Dibromomethane	16.2200	0.50	20.0000	81.1	74 - 116	5.58	20
Dichlorodifluoromethane	23.0500	0.50	20.0000	115	40 - 186	0.740	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 : 06/13/2016

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 Limit	Notes

Batch B6F0312 - MSVOA_LL_W (continued)

LCS Dup (B6F0312-BSD1) - Continued

Prepared: 6/13/2016 Analyzed: 6/13/2016

Ethylbenzene	38.0400	0.50	40.0000		95.1	77 - 130	0.739	20	
Hexachlorobutadiene	18.3000	0.50	20.0000		91.5	52 - 176	0.164	20	
Isopropylbenzene	22.2000	0.50	20.0000		111	77 - 144	3.25	20	
m,p-Xylene	41.2700	1.0	40.0000		103	84 - 136	0.608	20	
Methylene chloride	16.3300	1.0	20.0000		81.6	72 - 150	2.00	20	
n-Butylbenzene	20.5200	0.50	20.0000		103	73 - 154	0.922	20	
n-Propylbenzene	21.6100	0.50	20.0000		108	77 - 145	2.48	20	
Naphthalene	16.1000	0.50	20.0000		80.5	55 - 137	6.74	20	
o-Xylene	40.8700	0.50	40.0000		102	79 - 135	2.25	20	
sec-Butylbenzene	21.0500	0.50	20.0000		105	73 - 157	1.29	20	
Styrene	19.3600	0.50	20.0000		96.8	78 - 125	3.09	20	
tert-Butylbenzene	20.3100	0.50	20.0000		102	78 - 149	2.39	20	
Tetrachloroethene	19.1600	0.50	20.0000		95.8	74 - 136	1.42	20	
Toluene	37.9700	0.50	40.0000		94.9	78 - 124	1.19	20	
trans-1,2-Dichloroethene	18.2300	0.50	20.0000		91.2	66 - 131	0.716	20	
Trichloroethene	18.0000	0.50	20.0000		90.0	78 - 128	2.19	20	
Trichlorofluoromethane	23.0400	0.50	20.0000		115	60 - 170	1.44	20	
Vinyl chloride	20.1900	0.50	20.0000		101	55 - 148	2.78	20	
Surrogate: 1,2-Dichloroethane-d4	23.39		25.0000		93.6	51 - 157			
Surrogate: 4-Bromofluorobenzene	28.36		25.0000		113	61 - 123			
Surrogate: Dibromofluoromethane	24.96		25.0000		99.8	57 - 147			
Surrogate: Toluene-d8	26.96		25.0000		108	61 - 119			



Certificate of Analysis

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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 : 06/13/2016

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

Batch B6F0087 - MSSEMI_ISOTOPEDILN_W

Blank (B6F0087-BLK1)

Prepared: 6/3/2016 Analyzed: 6/3/2016

1,4-Dioxane	ND	2.0		NR					
Surrogate: 1,2-Dichlorobenzene-d4	49.76		100.000	49.8	42 - 106				
Surrogate: 2-Fluorobiphenyl	60.35		100.000	60.4	55 - 117				
Surrogate: 4-Terphenyl-d14	84.23		100.000	84.2	52 - 142				
Surrogate: Nitrobenzene-d5	57.69		100.000	57.7	43 - 116				

LCS (B6F0087-BS1)

Prepared: 6/3/2016 Analyzed: 6/3/2016

1,4-Dioxane	105.260	2.0	100.000	105	62 - 127				
Surrogate: 1,2-Dichlorobenzene-d4	52.65		100.000	52.6	42 - 106				
Surrogate: 2-Fluorobiphenyl	67.92		100.000	67.9	55 - 117				
Surrogate: 4-Terphenyl-d14	84.21		100.000	84.2	52 - 142				
Surrogate: Nitrobenzene-d5	62.71		100.000	62.7	43 - 116				

LCS Dup (B6F0087-BSD1)

Prepared: 6/3/2016 Analyzed: 6/3/2016

1,4-Dioxane	105.370	2.0	100.000	105	62 - 127	0.104	20		
Surrogate: 1,2-Dichlorobenzene-d4	53.43		100.000	53.4	42 - 106				
Surrogate: 2-Fluorobiphenyl	67.54		100.000	67.5	55 - 117				
Surrogate: 4-Terphenyl-d14	78.13		100.000	78.1	52 - 142				
Surrogate: Nitrobenzene-d5	63.27		100.000	63.3	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 : 06/13/2016

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	% Rec Limits	RPD	RPD Limit	Notes

Batch B6F0016 - MSSEMI_W

Blank (B6F0016-BLK1)

Prepared: 6/1/2016 Analyzed: 6/1/2016

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.6375		1.00000		63.8	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.7870		1.00000		78.7	28 - 122			
Surrogate: 4-Terphenyl-d14	0.8427		1.00000		84.3	43 - 131			
Surrogate: Nitrobenzene-d5	0.7235		1.00000		72.4	20 - 119			

LCS (B6F0016-BS1)

Prepared: 6/1/2016 Analyzed: 6/1/2016

1,4-Dioxane	1.30141	0.20	1.00000		130	49 - 169			
Surrogate: 1,2-Dichlorobenzene-d4	0.5722		1.00000		57.2	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.7018		1.00000		70.2	28 - 122			
Surrogate: 4-Terphenyl-d14	0.7475		1.00000		74.7	43 - 131			
Surrogate: Nitrobenzene-d5	0.6640		1.00000		66.4	20 - 119			

LCS Dup (B6F0016-BSD1)

Prepared: 6/1/2016 Analyzed: 6/1/2016

1,4-Dioxane	1.23372	0.20	1.00000		123	49 - 169	5.34	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.6280		1.00000		62.8	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.7515		1.00000		75.1	28 - 122			
Surrogate: 4-Terphenyl-d14	0.7801		1.00000		78.0	43 - 131			
Surrogate: Nitrobenzene-d5	0.7327		1.00000		73.3	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 : 06/13/2016

Notes and Definitions

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.

Bromate by EPA 317
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#: 1601910-04 / POX	ND

Method Blank	ND

Detection Limit	0.5

Date Analyzed:	06-06-16

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	950	95	960	96	1
QC Guidelines				75-125		75-125	NMT 10

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 1601910

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#: SC10442- STANDARD TAT (RA)

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

Analysis	Due	Expires	Matrix	Date Sampled
ATL Lab#: 1601910-04 / POX 317.0 SUB [Bromate] 1-Poly Unpres - 125mL Comments:	06/15/16 17:00	06/02/16 09:30	Groundwater	06/01/16 09:30

Released By _____ Date _____ Received By _____ Date _____

Released By _____ Date _____ Received By _____ Date _____



Fax 858.455.6533

Date: 6/1/16
Page 1 of 1

[illegible]

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. δ 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

SECRET - CONFIDENTIAL



June 08, 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 : 1601911

Client Reference : Raytheon Main GETS Quarterly Sample, 532.15

Enclosed are the results for sample(s) received on June 01, 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,

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

Eddie Rodriguez
Laboratory Director

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



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 06/08/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CEFF	1601911-01	Groundwater	6/01/16 9:17	6/01/16 11:04
POX	1601911-02	Groundwater	6/01/16 9:30	6/01/16 11:04
EW-02	1601911-03	Groundwater	6/01/16 10:15	6/01/16 11:04
MW-29	1601911-04	Groundwater	6/01/16 10:40	6/01/16 11:04
INF	1601911-05	Groundwater	6/01/16 9:52	6/01/16 11:04

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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San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 06/08/2016

Client Sample ID CEFF

Lab ID: 1601911-01

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	700	10	1	B6F0164	06/06/2016	06/07/16 08:00	



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 : 06/08/2016

Client Sample ID POX

Lab ID: 1601911-02

Anions Scan by Ion Chromatography EPA 300.0

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	120	10	20	B6F0098	06/01/2016	06/01/16 17:20	
Nitrate, as N	5.6	0.20	2	B6F0098	06/01/2016	06/01/16 16:23	
Nitrite, as N	ND	0.20	2	B6F0098	06/01/2016	06/01/16 16:23	D1
ortho-Phosphate, as P	ND	0.10	2	B6F0098	06/01/2016	06/01/16 16:23	D1
Sulfate	140	20	20	B6F0098	06/01/2016	06/01/16 17:20	

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	B6F0181	06/01/2016	06/01/16 18:57	

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	680	10	1	B6F0164	06/06/2016	06/07/16 08:00	

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	B6F0052	06/02/2016	06/02/16 14:04	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 06/08/2016

Client Sample ID EW-02

Lab ID: 1601911-03

Anions Scan by Ion Chromatography EPA 300.0

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	98	10	20	B6F0098	06/01/2016	06/01/16 17:32	
Nitrate, as N	5.1	0.20	2	B6F0098	06/01/2016	06/01/16 16:35	
Nitrite, as N	ND	0.20	2	B6F0098	06/01/2016	06/01/16 16:35	D1
ortho-Phosphate, as P	ND	0.10	2	B6F0098	06/01/2016	06/01/16 16:35	D1
Sulfate	150	20	20	B6F0098	06/01/2016	06/01/16 17:32	

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	B6F0181	06/01/2016	06/01/16 18:57	

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)	220	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	
Alkalinity, Total (as CaCO₃)	220	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	

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	B6F0164	06/06/2016	06/07/16 08:00	

Total Organic Carbon by SM 5310B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	1	B6F0185	06/07/2016	06/07/16 16:26	

Chemical Oxygen Demand by EPA 410.4

Analyst: LA

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



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 : 06/08/2016

Client Sample ID EW-02

Lab ID: 1601911-03

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	B6F0052	06/02/2016	06/02/16 14:04	

Total Metals by ICP-AES EPA 6010B

Analyst: SB

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Selenium	ND	0.010	1	B6F0131	06/07/2016	06/07/16 14:25	

Dissolved Metals by ICP-AES EPA 6010B

Analyst: SB

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Calcium	89	0.50	1	B6F0133	06/07/2016	06/07/16 13:40	
Iron	ND	0.50	1	B6F0133	06/07/2016	06/07/16 13:40	
Magnesium	27	0.10	1	B6F0133	06/07/2016	06/07/16 13:40	
Manganese	ND	0.50	1	B6F0133	06/07/2016	06/07/16 13:40	
Selenium	ND	0.010	1	B6F0133	06/07/2016	06/07/16 13:40	
Sodium	74	1.0	1	B6F0133	06/07/2016	06/07/16 13:40	



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 : 06/08/2016

Client Sample ID MW-29

Lab ID: 1601911-04

Anions Scan by Ion Chromatography EPA 300.0

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	200	10	20	B6F0098	06/01/2016	06/01/16 17:43	
Nitrate, as N	7.3	0.20	2	B6F0098	06/01/2016	06/01/16 16:46	
Nitrite, as N	ND	0.20	2	B6F0098	06/01/2016	06/01/16 16:46	D1
ortho-Phosphate, as P	ND	0.10	2	B6F0098	06/01/2016	06/01/16 16:46	D1
Sulfate	130	20	20	B6F0098	06/01/2016	06/01/16 17:43	

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	B6F0181	06/01/2016	06/01/16 18:57	

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)	260	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	
Alkalinity, Total (as CaCO ₃)	260	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	

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	830	10	1	B6F0164	06/06/2016	06/07/16 08:00	

Total Organic Carbon by SM 5310B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	1	B6F0185	06/07/2016	06/07/16 16:44	

Chemical Oxygen Demand by EPA 410.4

Analyst: LA

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



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 : 06/08/2016

Client Sample ID MW-29

Lab ID: 1601911-04

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	ND	5.0	1	B6F0052	06/02/2016	06/02/16 14:04	

Total Metals by ICP-AES EPA 6010B

Analyst: SB

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Selenium	ND	0.010	1	B6F0131	06/07/2016	06/07/16 14:29	

Dissolved Metals by ICP-AES EPA 6010B

Analyst: SB

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Calcium	120	0.50	1	B6F0133	06/07/2016	06/07/16 13:44	
Iron	ND	0.50	1	B6F0133	06/07/2016	06/07/16 13:44	
Magnesium	35	0.10	1	B6F0133	06/07/2016	06/07/16 13:44	
Manganese	ND	0.50	1	B6F0133	06/07/2016	06/07/16 13:44	
Selenium	ND	0.010	1	B6F0133	06/07/2016	06/07/16 13:44	
Sodium	110	1.0	1	B6F0133	06/07/2016	06/07/16 13:44	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 06/08/2016

Client Sample ID INF

Lab ID: 1601911-05

Anions Scan by Ion Chromatography EPA 300.0

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	120	10	20	B6F0098	06/01/2016	06/01/16 17:54	
Nitrate, as N	5.2	0.10	1	B6F0098	06/01/2016	06/01/16 16:57	
Nitrite, as N	ND	0.10	1	B6F0098	06/01/2016	06/01/16 16:57	
ortho-Phosphate, as P	ND	0.05	1	B6F0098	06/01/2016	06/01/16 16:57	
Sulfate	140	20	20	B6F0098	06/01/2016	06/01/16 17:54	

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	B6F0181	06/01/2016	06/01/16 18:57	

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)	230	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	
Alkalinity, Total (as CaCO ₃)	230	5.0	1	B6F0179	06/08/2016	06/08/16 07:40	

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	690	10	1	B6F0164	06/06/2016	06/07/16 08:00	

Total Organic Carbon by SM 5310B

Analyst: PT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	1	B6F0185	06/07/2016	06/07/16 17:00	

Chemical Oxygen Demand by EPA 410.4

Analyst: LA

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



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 : 06/08/2016

Client Sample ID INF

Lab ID: 1601911-05

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	B6F0052	06/02/2016	06/02/16 14:04	

Total Metals by ICP-AES EPA 6010B

Analyst: SB

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Selenium	ND	0.010	1	B6F0131	06/07/2016	06/07/16 14:33	

Dissolved Metals by ICP-AES EPA 6010B

Analyst: SB

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Calcium	94	0.50	1	B6F0133	06/07/2016	06/07/16 13:48	
Iron	ND	0.50	1	B6F0133	06/07/2016	06/07/16 13:48	
Magnesium	28	0.10	1	B6F0133	06/07/2016	06/07/16 13:48	
Manganese	ND	0.50	1	B6F0133	06/07/2016	06/07/16 13:48	
Selenium	ND	0.010	1	B6F0133	06/07/2016	06/07/16 13:48	
Sodium	80	1.0	1	B6F0133	06/07/2016	06/07/16 13:48	



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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 : 06/08/2016

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

Batch B6F0179 - No_Prep_WC1_W

Blank (B6F0179-BLK1)

Prepared: 6/8/2016 Analyzed: 6/8/2016

Alkalinity, Bicarbonate (as CaCO₃)
Alkalinity, Carbonate (as CaCO₃)
Alkalinity, Hydroxide (as CaCO₃)
Alkalinity, Total (as CaCO₃)

ND
ND
ND
ND

5.0
5.0
5.0
5.0

NR
NR
NR
NR

LCS (B6F0179-BS1)

Prepared: 6/8/2016 Analyzed: 6/8/2016

Alkalinity, Total (as CaCO₃)

101.090

5.0

99.9580

101

80 - 120

Duplicate (B6F0179-DUP1)

Source: 1601911-03

Prepared: 6/8/2016 Analyzed: 6/8/2016

Alkalinity, Total (as CaCO₃)

215.220

5.0

218.480

NR

1.50

20

Matrix Spike (B6F0179-MS1)

Source: 1601911-03

Prepared: 6/8/2016 Analyzed: 6/8/2016

Alkalinity, Total (as CaCO₃)

410.870

10

199.916

218.480

96.2

80 - 120

Matrix Spike Dup (B6F0179-MSD1)

Source: 1601911-03

Prepared: 6/8/2016 Analyzed: 6/8/2016

Alkalinity, Total (as CaCO₃)

413.040

10

199.916

218.480

97.3

80 - 120

0.527

20



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 : 06/08/2016

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

Batch B6F0164 - No_Prep_WC1_W

Blank (B6F0164-BLK1)

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

Residue, Dissolved

ND

10

NR

LCS (B6F0164-BS1)

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

Residue, Dissolved

968.000

10

988.000

98.0

80 - 120

Duplicate (B6F0164-DUP1)

Source: 1601976-01

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

Residue, Dissolved

626.000

10

633.000

NR

1.11

10



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San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 06/08/2016

Anions Scan by Ion Chromatography EPA 300.0 - Quality Control

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

Batch B6F0098 - No_Prep_IC1_W

Blank (B6F0098-BLK1)

Prepared: 6/1/2016 Analyzed: 6/1/2016

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 (B6F0098-BS1)

Prepared: 6/1/2016 Analyzed: 6/1/2016

Chloride	1.00510	0.50	1.00000		101	90 - 110			
Nitrate, as N	1.03990	0.10	1.00000		104	90 - 110			
Nitrite, as N	1.01120	0.10	1.00000		101	90 - 110			
ortho-Phosphate, as P	1.01100	0.05	1.00000		101	90 - 110			
Sulfate	1.98320	1.0	2.00000		99.2	90 - 110			

Duplicate (B6F0098-DUP1)

Source: 1601911-02

Prepared: 6/1/2016 Analyzed: 6/1/2016

Chloride	116.126	10		117.848	NR		1.47	20	
Nitrate, as N	18.1220	2.0		5.61740	NR		105	20	R
Nitrite, as N	ND	2.0		ND	NR			20	
ortho-Phosphate, as P	ND	1.0		ND	NR			20	
Sulfate	139.986	20		140.634	NR		0.462	20	

Matrix Spike (B6F0098-MS1)

Source: 1601911-02

Prepared: 6/1/2016 Analyzed: 6/1/2016

Chloride	8.35710		2.50000	5.89240	98.6	80 - 120			
Nitrate, as N	3.07330		2.50000	0.280870	112	80 - 120			
Nitrite, as N	2.76950		2.50000	0.00000	111	80 - 120			
ortho-Phosphate, as P	2.63760		2.50000	0.00000	106	80 - 120			
Sulfate	11.9042		5.00000	7.03170	97.4	80 - 120			

Matrix Spike Dup (B6F0098-MSD1)

Source: 1601911-02

Prepared: 6/1/2016 Analyzed: 6/1/2016

Chloride	8.41030		2.50000	5.89240	101	80 - 120	0.635	20	
Nitrate, as N	3.08660		2.50000	0.280870	112	80 - 120	0.432	20	
Nitrite, as N	2.80530		2.50000	0.00000	112	80 - 120	1.28	20	
ortho-Phosphate, as P	2.64830		2.50000	0.00000	106	80 - 120	0.405	20	
Sulfate	11.9534		5.00000	7.03170	98.4	80 - 120	0.412	20	



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 06/08/2016

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 Limit	Notes

Batch B6F0181 - No_Prep_II_W

Blank (B6F0181-BLK1)

Prepared: 6/1/2016 Analyzed: 6/1/2016

UV Absorption	ND	0.01			NR				

Duplicate (B6F0181-DUP1)

Source: 1601910-05

Prepared: 6/1/2016 Analyzed: 6/1/2016

UV Absorption	ND	0.01		ND	NR			20	

Duplicate (B6F0181-DUP2)

Source: 1601911-02

Prepared: 6/1/2016 Analyzed: 6/1/2016

UV Absorption	ND	0.01		ND	NR			20	

Duplicate (B6F0181-DUP3)

Source: 1601911-03

Prepared: 6/1/2016 Analyzed: 6/1/2016

UV Absorption	ND	0.01		ND	NR			20	

Duplicate (B6F0181-DUP4)

Source: 1601911-04

Prepared: 6/1/2016 Analyzed: 6/1/2016

UV Absorption	ND	0.01		ND	NR			20	

Duplicate (B6F0181-DUP5)

Source: 1601911-05

Prepared: 6/1/2016 Analyzed: 6/1/2016

UV Absorption	ND	0.01		ND	NR			20	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 06/08/2016

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

Batch B6F0185 - No_Prep_II_W

Blank (B6F0185-BLK1)

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

Organic Carbon, Total

ND

3.0

NR

LCS (B6F0185-BS1)

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

Organic Carbon, Total

18.3800

3.0

20.0000

91.9

80 - 120

LCS Dup (B6F0185-BSD1)

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

Organic Carbon, Total

16.8200

3.0

20.0000

84.1

80 - 120

8.86

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 : 06/08/2016

Chemical Oxygen Demand by EPA 410.4 - Quality Control

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

Batch B6F0052 - Prep_WC1_W

Blank (B6F0052-BLK1)

Prepared: 6/2/2016 Analyzed: 6/2/2016

Chemical Oxygen Demand

ND

5.0

NR

LCS (B6F0052-BS1)

Prepared: 6/2/2016 Analyzed: 6/2/2016

Chemical Oxygen Demand

505.005

5.0

501.500

101

80 - 120

Matrix Spike (B6F0052-MS1)

Source: 1601911-05

Prepared: 6/2/2016 Analyzed: 6/2/2016

Chemical Oxygen Demand

489.980

5.0

501.500

ND

97.7

80 - 120

Matrix Spike Dup (B6F0052-MSD1)

Source: 1601911-05

Prepared: 6/2/2016 Analyzed: 6/2/2016

Chemical Oxygen Demand

482.020

5.0

501.500

ND

96.1

80 - 120

1.64

20



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Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 06/08/2016

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

Batch B6F0131 - EPA 3010A_W

Blank (B6F0131-BLK1)

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

Selenium ND 0.010 NR

LCS (B6F0131-BS1)

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

Selenium 0.893988 0.010 1.00000 89.4 80 - 120

Matrix Spike (B6F0131-MS1)

Source: 1601904-01

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

Selenium 2.27608 0.010 2.50000 0.019321 90.3 76 - 117

Matrix Spike Dup (B6F0131-MSD1)

Source: 1601904-01

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

Selenium 2.26026 0.010 2.50000 0.019321 89.6 76 - 117 0.698 20



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Project Number : Raytheon Main GETS Quarterly Sample,

Report To : Steve Netto

Reported : 06/08/2016

Dissolved 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

Batch B6F0133 - EPA 3010A_W

Blank (B6F0133-BLK1)

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

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 (B6F0133-BS1)

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

Calcium	19.8986	0.50	20.0000		99.5	80 - 120			
Iron	19.6246	0.50	20.0000		98.1	80 - 120			
Magnesium	19.6547	0.10	20.0000		98.3	80 - 120			
Manganese	9.61414	0.50	10.0000		96.1	80 - 120			
Selenium	0.897951	0.010	1.00000		89.8	80 - 120			
Sodium	20.5975	1.0	20.0000		103	80 - 120			

LCS Dup (B6F0133-BSD1)

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

Calcium	19.3392	0.50	20.0000		96.7	80 - 120	2.85	20	
Iron	19.1686	0.50	20.0000		95.8	80 - 120	2.35	20	
Magnesium	19.0993	0.10	20.0000		95.5	80 - 120	2.87	20	
Manganese	9.30046	0.50	10.0000		93.0	80 - 120	3.32	20	
Selenium	0.863707	0.010	1.00000		86.4	80 - 120	3.89	20	
Sodium	20.0686	1.0	20.0000		100	80 - 120	2.60	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 : 06/08/2016

Notes and Definitions

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



HARGIS & ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

Date: 6/1/16
Page 1 of 1

PROJECT: Raytheon Main GETS Quarterly 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		MATRIX		PRESERVATION		CONTAINERS					ANALYSIS REQUESTED										Expected Concentration Range (ppb) for VOA's		SPECIAL HANDLING					REMARKS							
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	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			
1601911 - 1	CEFF	6/1/2016	9:17	X						X	1									X																	
1601911 - 2	POX		9:30	X					X	X	2	1		1			X	X		X			X														
1601911 - 3	EW-02		10:15	X			X	X	X	X	3	2	2	2	1		X	X	X	X	X	X	X	X													
1601911 - 4	MW-29		10:40	X			X	X	X	X	3	2	2	2	1		X	X	X	X	X	X	X	X													
1601911 - 5	INF		9:52	X			X	X	X	X	3	2	2	2	1		X	X	X	X	X	X	X	X													
Total number of containers per analysis:											9	9	7	6	4												Total No. of Containers: <u>35</u>										
Relinquished By: / Company:		Date / Time		Received By: / Company		Date / Time																															
Kevin Fong H&A		6/1/16 11:04		[Signature]		6/1/16 1104																															
Relinquished By: / Company:		Date / Time		Received By: / Company		Date / Time																															
[Signature]		6/1/16 1209		[Signature]		6/1/16 1200																															

- ☐ 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.

1.8 Temperature on receipt



June 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 : 1602150

Client Reference : Raytheon Main GETS Mid Month Sample, 532.15

Enclosed are the results for sample(s) received on June 16, 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,

A handwritten signature in black ink, appearing to read "E Rodriguez", is written over a light blue horizontal line.

Eddie Rodriguez
Laboratory Director

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



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-061616	1602150-01	Lab prepared water	6/16/16 7:00	6/16/16 10:20
CEFF	1602150-02	Groundwater	6/16/16 8:10	6/16/16 10:20
CBT	1602150-03	Groundwater	6/16/16 8:17	6/16/16 10:20
POX	1602150-04	Groundwater	6/16/16 8:20	6/16/16 10:20
INF	1602150-05	Groundwater	6/16/16 8:25	6/16/16 10:20
EW-02	1602150-06	Groundwater	6/16/16 9:05	6/16/16 10:20
MW-29	1602150-07	Groundwater	6/16/16 9:15	6/16/16 10:20



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID TB-061616

Lab ID: 1602150-01

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	B6F0578	06/21/2016	06/21/16 15:18	
1,1,1-Trichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,1,2-Trichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,1-Dichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,1-Dichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,1-Dichloropropene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,2,3-Trichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,2,3-Trichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,2,4-Trichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,2,4-Trimethylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,2-Dibromoethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,2-Dichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,2-Dichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,2-Dichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,3,5-Trimethylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,3-Dichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,3-Dichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
1,4-Dichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
2,2-Dichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
2-Chlorotoluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
4-Chlorotoluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
4-Isopropyltoluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Benzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Bromobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Bromodichloromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Bromoform	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Bromomethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Carbon tetrachloride	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Chlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Chloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Chloroform	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Chloromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
cis-1,2-Dichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
cis-1,3-Dichloropropene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Dibromochloromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID TB-061616

Lab ID: 1602150-01

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	B6F0578	06/21/2016	06/21/16 15:18	
Dichlorodifluoromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Ethylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Hexachlorobutadiene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Isopropylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
m,p-Xylene	ND	1.0	1	B6F0578	06/21/2016	06/21/16 15:18	
Methylene chloride	ND	1.0	1	B6F0578	06/21/2016	06/21/16 15:18	
n-Butylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
n-Propylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Naphthalene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
o-Xylene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
sec-Butylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Styrene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
tert-Butylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Tetrachloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Toluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
trans-1,2-Dichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Trichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Trichlorofluoromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Vinyl chloride	ND	0.50	1	B6F0578	06/21/2016	06/21/16 15:18	
Surrogate: 1,2-Dichloroethane-d4	113 %	51 - 157		B6F0578	06/21/2016	06/21/16 15:18	
Surrogate: 4-Bromofluorobenzene	104 %	61 - 123		B6F0578	06/21/2016	06/21/16 15:18	
Surrogate: Dibromofluoromethane	109 %	57 - 147		B6F0578	06/21/2016	06/21/16 15:18	
Surrogate: Toluene-d8	103 %	61 - 119		B6F0578	06/21/2016	06/21/16 15:18	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID CEFF

Lab ID: 1602150-02

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	B6F0578	06/21/2016	06/21/16 18:07	
1,1,1-Trichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,1,2-Trichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,1-Dichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,1-Dichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,1-Dichloropropene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,2,3-Trichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,2,3-Trichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,2,4-Trichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,2,4-Trimethylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,2-Dibromoethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,2-Dichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,2-Dichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,2-Dichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,3,5-Trimethylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,3-Dichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,3-Dichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
1,4-Dichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
2,2-Dichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
2-Chlorotoluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
4-Chlorotoluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
4-Isopropyltoluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Benzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Bromobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Bromodichloromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Bromoform	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Bromomethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Carbon tetrachloride	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Chlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Chloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Chloroform	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Chloromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
cis-1,2-Dichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
cis-1,3-Dichloropropene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Dibromochloromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID CEFF

Lab ID: 1602150-02

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	B6F0578	06/21/2016	06/21/16 18:07	
Dichlorodifluoromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Ethylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Hexachlorobutadiene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Isopropylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
m,p-Xylene	ND	1.0	1	B6F0578	06/21/2016	06/21/16 18:07	
Methylene chloride	ND	1.0	1	B6F0578	06/21/2016	06/21/16 18:07	
n-Butylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
n-Propylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Naphthalene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
o-Xylene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
sec-Butylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Styrene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
tert-Butylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Tetrachloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Toluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
trans-1,2-Dichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Trichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Trichlorofluoromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Vinyl chloride	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:07	
Surrogate: 1,2-Dichloroethane-d4	119 %	51 - 157		B6F0578	06/21/2016	06/21/16 18:07	
Surrogate: 4-Bromofluorobenzene	106 %	61 - 123		B6F0578	06/21/2016	06/21/16 18:07	
Surrogate: Dibromofluoromethane	117 %	57 - 147		B6F0578	06/21/2016	06/21/16 18:07	
Surrogate: Toluene-d8	106 %	61 - 119		B6F0578	06/21/2016	06/21/16 18:07	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID CEFF

Lab ID: 1602150-02

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	B6F0593	06/21/2016	06/23/16 16:22	
Surrogate: 1,2-Dichlorobenzene-d4	53.7 %	31 - 106		B6F0593	06/21/2016	06/23/16 16:22	
Surrogate: 2-Fluorobiphenyl	66.3 %	28 - 122		B6F0593	06/21/2016	06/23/16 16:22	
Surrogate: 4-Terphenyl-d14	58.1 %	43 - 131		B6F0593	06/21/2016	06/23/16 16:22	
Surrogate: Nitrobenzene-d5	48.7 %	20 - 119		B6F0593	06/21/2016	06/23/16 16:22	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID CBT

Lab ID: 1602150-03

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	B6F0578	06/21/2016	06/21/16 17:43	
1,1,1-Trichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,1,2-Trichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,1-Dichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,1-Dichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,1-Dichloropropene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,2,3-Trichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,2,3-Trichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,2,4-Trichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,2,4-Trimethylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,2-Dibromoethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,2-Dichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,2-Dichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,2-Dichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,3,5-Trimethylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,3-Dichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,3-Dichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
1,4-Dichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
2,2-Dichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
2-Chlorotoluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
4-Chlorotoluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
4-Isopropyltoluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Benzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Bromobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Bromodichloromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Bromoform	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Bromomethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Carbon tetrachloride	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Chlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Chloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Chloroform	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Chloromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
cis-1,2-Dichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
cis-1,3-Dichloropropene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Dibromochloromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID CBT

Lab ID: 1602150-03

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	B6F0578	06/21/2016	06/21/16 17:43	
Dichlorodifluoromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Ethylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Hexachlorobutadiene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Isopropylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
m,p-Xylene	ND	1.0	1	B6F0578	06/21/2016	06/21/16 17:43	
Methylene chloride	ND	1.0	1	B6F0578	06/21/2016	06/21/16 17:43	
n-Butylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
n-Propylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Naphthalene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
o-Xylene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
sec-Butylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Styrene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
tert-Butylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Tetrachloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Toluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
trans-1,2-Dichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Trichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Trichlorofluoromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Vinyl chloride	ND	0.50	1	B6F0578	06/21/2016	06/21/16 17:43	
Surrogate: 1,2-Dichloroethane-d4	119 %	51 - 157		B6F0578	06/21/2016	06/21/16 17:43	
Surrogate: 4-Bromofluorobenzene	105 %	61 - 123		B6F0578	06/21/2016	06/21/16 17:43	
Surrogate: Dibromofluoromethane	118 %	57 - 147		B6F0578	06/21/2016	06/21/16 17:43	
Surrogate: Toluene-d8	105 %	61 - 119		B6F0578	06/21/2016	06/21/16 17:43	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID CBT

Lab ID: 1602150-03

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	B6F0593	06/21/2016	06/23/16 16:50	
Surrogate: 1,2-Dichlorobenzene-d4	59.9 %	31 - 106		B6F0593	06/21/2016	06/23/16 16:50	
Surrogate: 2-Fluorobiphenyl	73.0 %	28 - 122		B6F0593	06/21/2016	06/23/16 16:50	
Surrogate: 4-Terphenyl-d14	65.6 %	43 - 131		B6F0593	06/21/2016	06/23/16 16:50	
Surrogate: Nitrobenzene-d5	52.8 %	20 - 119		B6F0593	06/21/2016	06/23/16 16:50	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID POX

Lab ID: 1602150-04

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	B6F0578	06/21/2016	06/21/16 18:56	
1,1,1-Trichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,1,2-Trichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,1-Dichloroethane	0.71	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,1-Dichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,1-Dichloropropene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,2,3-Trichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,2,3-Trichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,2,4-Trichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,2,4-Trimethylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,2-Dibromoethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,2-Dichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,2-Dichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,2-Dichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,3,5-Trimethylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,3-Dichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,3-Dichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
1,4-Dichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
2,2-Dichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
2-Chlorotoluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
4-Chlorotoluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
4-Isopropyltoluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Benzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Bromobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Bromodichloromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Bromoform	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Bromomethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Carbon tetrachloride	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Chlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Chloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Chloroform	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Chloromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
cis-1,2-Dichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
cis-1,3-Dichloropropene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Dibromochloromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID POX

Lab ID: 1602150-04

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	B6F0578	06/21/2016	06/21/16 18:56	
Dichlorodifluoromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Ethylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Hexachlorobutadiene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Isopropylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
m,p-Xylene	ND	1.0	1	B6F0578	06/21/2016	06/21/16 18:56	
Methylene chloride	ND	1.0	1	B6F0578	06/21/2016	06/21/16 18:56	
n-Butylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
n-Propylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Naphthalene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
o-Xylene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
sec-Butylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Styrene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
tert-Butylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Tetrachloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Toluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
trans-1,2-Dichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Trichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Trichlorofluoromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Vinyl chloride	ND	0.50	1	B6F0578	06/21/2016	06/21/16 18:56	
Surrogate: 1,2-Dichloroethane-d4	119 %	51 - 157		B6F0578	06/21/2016	06/21/16 18:56	
Surrogate: 4-Bromofluorobenzene	105 %	61 - 123		B6F0578	06/21/2016	06/21/16 18:56	
Surrogate: Dibromofluoromethane	115 %	57 - 147		B6F0578	06/21/2016	06/21/16 18:56	
Surrogate: Toluene-d8	108 %	61 - 119		B6F0578	06/21/2016	06/21/16 18:56	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID POX

Lab ID: 1602150-04

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	B6F0593	06/21/2016	06/23/16 17:19	
Surrogate: 1,2-Dichlorobenzene-d4	53.1 %	31 - 106		B6F0593	06/21/2016	06/23/16 17:19	
Surrogate: 2-Fluorobiphenyl	70.5 %	28 - 122		B6F0593	06/21/2016	06/23/16 17:19	
Surrogate: 4-Terphenyl-d14	67.1 %	43 - 131		B6F0593	06/21/2016	06/23/16 17:19	
Surrogate: Nitrobenzene-d5	48.0 %	20 - 119		B6F0593	06/21/2016	06/23/16 17:19	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID INF

Lab ID: 1602150-05

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	B6F0626	06/22/2016	06/22/16 20:37	
1,1,1-Trichloroethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,1,2-Trichloroethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,1-Dichloroethane	0.94	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,1-Dichloroethene	75	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,1-Dichloropropene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,2,3-Trichloropropane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,2,3-Trichlorobenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,2,4-Trichlorobenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,2,4-Trimethylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,2-Dibromoethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,2-Dichlorobenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,2-Dichloroethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,2-Dichloropropane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,3,5-Trimethylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,3-Dichlorobenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,3-Dichloropropane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
1,4-Dichlorobenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
2,2-Dichloropropane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
2-Chlorotoluene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
4-Chlorotoluene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
4-Isopropyltoluene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Benzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Bromobenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Bromodichloromethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Bromoform	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Bromomethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Carbon tetrachloride	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Chlorobenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Chloroethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Chloroform	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Chloromethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
cis-1,2-Dichloroethene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
cis-1,3-Dichloropropene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Dibromochloromethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID INF

Lab ID: 1602150-05

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	B6F0626	06/22/2016	06/22/16 20:37	
Dichlorodifluoromethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Ethylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Hexachlorobutadiene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Isopropylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
m,p-Xylene	ND	1.0	1	B6F0626	06/22/2016	06/22/16 20:37	
Methylene chloride	ND	1.0	1	B6F0626	06/22/2016	06/22/16 20:37	
n-Butylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
n-Propylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Naphthalene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
o-Xylene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
sec-Butylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Styrene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
tert-Butylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Tetrachloroethene	0.87	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Toluene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
trans-1,2-Dichloroethene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Trichloroethene	0.69	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Trichlorofluoromethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
Vinyl chloride	ND	0.50	1	B6F0626	06/22/2016	06/22/16 20:37	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>121 %</i>	<i>51 - 157</i>		B6F0626	06/22/2016	06/22/16 20:37	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>106 %</i>	<i>61 - 123</i>		B6F0626	06/22/2016	06/22/16 20:37	
<i>Surrogate: Dibromofluoromethane</i>	<i>118 %</i>	<i>57 - 147</i>		B6F0626	06/22/2016	06/22/16 20:37	
<i>Surrogate: Toluene-d8</i>	<i>107 %</i>	<i>61 - 119</i>		B6F0626	06/22/2016	06/22/16 20:37	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID INF

Lab ID: 1602150-05

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	B6F0553	06/20/2016	06/20/16 19:34	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>58.6 %</i>	<i>42 - 106</i>		B6F0553	06/20/2016	<i>06/20/16 19:34</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>74.3 %</i>	<i>55 - 117</i>		B6F0553	06/20/2016	<i>06/20/16 19:34</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>99.7 %</i>	<i>52 - 142</i>		B6F0553	06/20/2016	<i>06/20/16 19:34</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>65.0 %</i>	<i>43 - 116</i>		B6F0553	06/20/2016	<i>06/20/16 19:34</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID EW-02

Lab ID: 1602150-06

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	B6F0578	06/21/2016	06/21/16 19:20	
1,1,1-Trichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,1,2-Trichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,1-Dichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,1-Dichloroethene	36	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,1-Dichloropropene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,2,3-Trichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,2,3-Trichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,2,4-Trichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,2,4-Trimethylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,2-Dibromoethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,2-Dichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,2-Dichloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,2-Dichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,3,5-Trimethylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,3-Dichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,3-Dichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
1,4-Dichlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
2,2-Dichloropropane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
2-Chlorotoluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
4-Chlorotoluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
4-Isopropyltoluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Benzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Bromobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Bromodichloromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Bromoform	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Bromomethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Carbon tetrachloride	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Chlorobenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Chloroethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Chloroform	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Chloromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
cis-1,2-Dichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
cis-1,3-Dichloropropene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Dibromochloromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID EW-02

Lab ID: 1602150-06

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	B6F0578	06/21/2016	06/21/16 19:20	
Dichlorodifluoromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Ethylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Hexachlorobutadiene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Isopropylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
m,p-Xylene	ND	1.0	1	B6F0578	06/21/2016	06/21/16 19:20	
Methylene chloride	ND	1.0	1	B6F0578	06/21/2016	06/21/16 19:20	
n-Butylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
n-Propylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Naphthalene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
o-Xylene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
sec-Butylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Styrene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
tert-Butylbenzene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Tetrachloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Toluene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
trans-1,2-Dichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Trichloroethene	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Trichlorofluoromethane	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Vinyl chloride	ND	0.50	1	B6F0578	06/21/2016	06/21/16 19:20	
Surrogate: 1,2-Dichloroethane-d4	120 %	51 - 157		B6F0578	06/21/2016	06/21/16 19:20	
Surrogate: 4-Bromofluorobenzene	105 %	61 - 123		B6F0578	06/21/2016	06/21/16 19:20	
Surrogate: Dibromofluoromethane	117 %	57 - 147		B6F0578	06/21/2016	06/21/16 19:20	
Surrogate: Toluene-d8	107 %	61 - 119		B6F0578	06/21/2016	06/21/16 19:20	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID EW-02

Lab ID: 1602150-06

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	7.6	2.0	1	B6F0553	06/20/2016	06/20/16 20:02	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>55.4 %</i>	<i>42 - 106</i>		<i>B6F0553</i>	<i>06/20/2016</i>	<i>06/20/16 20:02</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>72.0 %</i>	<i>55 - 117</i>		<i>B6F0553</i>	<i>06/20/2016</i>	<i>06/20/16 20:02</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>99.4 %</i>	<i>52 - 142</i>		<i>B6F0553</i>	<i>06/20/2016</i>	<i>06/20/16 20:02</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>62.4 %</i>	<i>43 - 116</i>		<i>B6F0553</i>	<i>06/20/2016</i>	<i>06/20/16 20:02</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID MW-29

Lab ID: 1602150-07

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	B6F0626	06/22/2016	06/22/16 21:01	
1,1,1-Trichloroethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,1,2-Trichloroethane	1.2	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,1-Dichloroethane	3.2	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,1-Dichloroethene	240	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	E1
1,1-Dichloropropene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,2,3-Trichloropropane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,2,3-Trichlorobenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,2,4-Trichlorobenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,2,4-Trimethylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,2-Dibromoethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,2-Dichlorobenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,2-Dichloroethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,2-Dichloropropane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,3,5-Trimethylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,3-Dichlorobenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,3-Dichloropropane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
1,4-Dichlorobenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
2,2-Dichloropropane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
2-Chlorotoluene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
4-Chlorotoluene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
4-Isopropyltoluene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Benzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Bromobenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Bromodichloromethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Bromoform	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Bromomethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Carbon tetrachloride	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Chlorobenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Chloroethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Chloroform	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Chloromethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
cis-1,2-Dichloroethene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
cis-1,3-Dichloropropene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Dibromochloromethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID MW-29

Lab ID: 1602150-07

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	B6F0626	06/22/2016	06/22/16 21:01	
Dichlorodifluoromethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Ethylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Hexachlorobutadiene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Isopropylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
m,p-Xylene	ND	1.0	1	B6F0626	06/22/2016	06/22/16 21:01	
Methylene chloride	ND	1.0	1	B6F0626	06/22/2016	06/22/16 21:01	
n-Butylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
n-Propylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Naphthalene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
o-Xylene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
sec-Butylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Styrene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
tert-Butylbenzene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Tetrachloroethene	1.1	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Toluene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
trans-1,2-Dichloroethene	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Trichloroethene	2.5	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Trichlorofluoromethane	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
Vinyl chloride	ND	0.50	1	B6F0626	06/22/2016	06/22/16 21:01	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>119 %</i>	<i>51 - 157</i>		B6F0626	06/22/2016	<i>06/22/16 21:01</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>103 %</i>	<i>61 - 123</i>		B6F0626	06/22/2016	<i>06/22/16 21:01</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>118 %</i>	<i>57 - 147</i>		B6F0626	06/22/2016	<i>06/22/16 21:01</i>	
<i>Surrogate: Toluene-d8</i>	<i>105 %</i>	<i>61 - 119</i>		B6F0626	06/22/2016	<i>06/22/16 21:01</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Client Sample ID MW-29

Lab ID: 1602150-07

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	82	2.0	1	B6F0553	06/20/2016	06/20/16 20:31	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>49.8 %</i>	<i>42 - 106</i>		B6F0553	06/20/2016	<i>06/20/16 20:31</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>64.3 %</i>	<i>55 - 117</i>		B6F0553	06/20/2016	<i>06/20/16 20:31</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>93.6 %</i>	<i>52 - 142</i>		B6F0553	06/20/2016	<i>06/20/16 20:31</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>55.8 %</i>	<i>43 - 116</i>		B6F0553	06/20/2016	<i>06/20/16 20:31</i>	



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Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

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

Batch B6F0578 - MSVOA_LL_W

Blank (B6F0578-BLK1)

Prepared: 6/21/2016 Analyzed: 6/21/2016

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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Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

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

Batch B6F0578 - MSVOA_LL_W (continued)

Blank (B6F0578-BLK1) - Continued

Prepared: 6/21/2016 Analyzed: 6/21/2016

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				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>26.84</i>		<i>25.0000</i>		<i>107</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>26.78</i>		<i>25.0000</i>		<i>107</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>26.52</i>		<i>25.0000</i>		<i>106</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>26.08</i>		<i>25.0000</i>		<i>104</i>	<i>61 - 119</i>			

LCS (B6F0578-BS1)

Prepared: 6/21/2016 Analyzed: 6/21/2016

1,1,1,2-Tetrachloroethane	20.7900	0.50	20.0000		104	76 - 132			
1,1,1-Trichloroethane	23.1900	0.50	20.0000		116	72 - 144			
1,1,2,2-Tetrachloroethane	17.8600	0.50	20.0000		89.3	70 - 120			
1,1,2-Trichloroethane	19.3100	0.50	20.0000		96.6	75 - 120			
1,1-Dichloroethane	21.6200	0.50	20.0000		108	65 - 127			
1,1-Dichloroethene	22.1200	0.50	20.0000		111	63 - 142			
1,1-Dichloropropene	24.0000	0.50	20.0000		120	78 - 137			
1,2,3-Trichloropropane	19.9700	0.50	20.0000		99.8	73 - 118			
1,2,3-Trichlorobenzene	20.9800	0.50	20.0000		105	53 - 164			
1,2,4-Trichlorobenzene	22.2400	0.50	20.0000		111	58 - 144			
1,2,4-Trimethylbenzene	24.4900	0.50	20.0000		122	75 - 140			
1,2-Dibromo-3-chloropropane	18.5500	0.50	20.0000		92.8	61 - 131			
1,2-Dibromoethane	19.9900	0.50	20.0000		100	74 - 125			
1,2-Dichlorobenzene	21.2300	0.50	20.0000		106	78 - 122			
1,2-Dichloroethane	19.5600	0.50	20.0000		97.8	70 - 126			
1,2-Dichloropropane	20.8400	0.50	20.0000		104	69 - 120			
1,3,5-Trimethylbenzene	24.8500	0.50	20.0000		124	73 - 145			



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

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

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

Batch B6F0578 - MSVOA_LL_W (continued)

LCS (B6F0578-BS1) - Continued

Prepared: 6/21/2016 Analyzed: 6/21/2016

1,3-Dichlorobenzene	21.6000	0.50	20.0000		108	76 - 126		
1,3-Dichloropropane	20.8600	0.50	20.0000		104	76 - 117		
1,4-Dichlorobenzene	20.7300	0.50	20.0000		104	77 - 120		
2,2-Dichloropropane	24.8300	0.50	20.0000		124	47 - 169		
2-Chlorotoluene	23.1500	0.50	20.0000		116	75 - 135		
4-Chlorotoluene	23.8000	0.50	20.0000		119	70 - 133		
4-Isopropyltoluene	23.9900	0.50	20.0000		120	72 - 153		
Benzene	42.9300	0.50	40.0000		107	73 - 123		
Bromobenzene	21.5200	0.50	20.0000		108	75 - 121		
Bromodichloromethane	20.8200	0.50	20.0000		104	73 - 124		
Bromoform	19.5300	0.50	20.0000		97.6	70 - 135		
Bromomethane	12.8000	0.50	20.0000		64.0	10 - 166		
Carbon tetrachloride	22.7400	0.50	20.0000		114	65 - 171		
Chlorobenzene	20.8900	0.50	20.0000		104	80 - 121		
Chloroethane	19.3000	0.50	20.0000		96.5	55 - 143		
Chloroform	20.4900	0.50	20.0000		102	65 - 130		
Chloromethane	19.0000	0.50	20.0000		95.0	21 - 141		
cis-1,2-Dichloroethene	20.2100	0.50	20.0000		101	64 - 126		
cis-1,3-Dichloropropene	21.6500	0.50	20.0000		108	70 - 131		
Dibromochloromethane	21.1600	0.50	20.0000		106	74 - 125		
Dibromomethane	19.9000	0.50	20.0000		99.5	74 - 116		
Dichlorodifluoromethane	24.0600	0.50	20.0000		120	40 - 186		
Ethylbenzene	43.2200	0.50	40.0000		108	77 - 130		
Hexachlorobutadiene	22.0900	0.50	20.0000		110	52 - 176		
Isopropylbenzene	26.8700	0.50	20.0000		134	77 - 144		
m,p-Xylene	49.0000	1.0	40.0000		122	84 - 136		
Methylene chloride	16.2300	1.0	20.0000		81.2	72 - 150		
n-Butylbenzene	25.2600	0.50	20.0000		126	73 - 154		
n-Propylbenzene	24.9700	0.50	20.0000		125	77 - 145		
Naphthalene	19.2200	0.50	20.0000		96.1	55 - 137		
o-Xylene	46.7000	0.50	40.0000		117	79 - 135		
sec-Butylbenzene	25.2300	0.50	20.0000		126	73 - 157		
Styrene	22.0700	0.50	20.0000		110	78 - 125		
tert-Butylbenzene	25.1000	0.50	20.0000		126	78 - 149		
Tetrachloroethene	22.7500	0.50	20.0000		114	74 - 136		
Toluene	42.9100	0.50	40.0000		107	78 - 124		
trans-1,2-Dichloroethene	21.2200	0.50	20.0000		106	66 - 131		
Trichloroethene	22.5900	0.50	20.0000		113	78 - 128		
Trichlorofluoromethane	25.3000	0.50	20.0000		126	60 - 170		
Vinyl chloride	20.3700	0.50	20.0000		102	55 - 148		

Surrogate: 1,2-Dichloroethane-d4	24.82		25.0000		99.3	51 - 157		



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

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

Batch B6F0578 - MSVOA_LL_W (continued)

LCS (B6F0578-BS1) - Continued

Prepared: 6/21/2016 Analyzed: 6/21/2016

Surrogate: 4-Bromofluorobenzene	27.73		25.0000		111	61 - 123			
Surrogate: Dibromofluoromethane	25.17		25.0000		101	57 - 147			
Surrogate: Toluene-d8	27.03		25.0000		108	61 - 119			

LCS Dup (B6F0578-BSD1)

Prepared: 6/21/2016 Analyzed: 6/21/2016

1,1,1,2-Tetrachloroethane	21.2700	0.50	20.0000		106	76 - 132	2.28	20	
1,1,1-Trichloroethane	24.0000	0.50	20.0000		120	72 - 144	3.43	20	
1,1,2,2-Tetrachloroethane	19.1500	0.50	20.0000		95.8	70 - 120	6.97	20	
1,1,2-Trichloroethane	20.0800	0.50	20.0000		100	75 - 120	3.91	20	
1,1-Dichloroethane	22.2400	0.50	20.0000		111	65 - 127	2.83	20	
1,1-Dichloroethene	22.2200	0.50	20.0000		111	63 - 142	0.451	20	
1,1-Dichloropropene	24.7200	0.50	20.0000		124	78 - 137	2.96	20	
1,2,3-Trichloropropane	20.7800	0.50	20.0000		104	73 - 118	3.98	20	
1,2,3-Trichlorobenzene	21.8500	0.50	20.0000		109	53 - 164	4.06	20	
1,2,4-Trichlorobenzene	22.8600	0.50	20.0000		114	58 - 144	2.75	20	
1,2,4-Trimethylbenzene	25.4800	0.50	20.0000		127	75 - 140	3.96	20	
1,2-Dibromo-3-chloropropane	20.0200	0.50	20.0000		100	61 - 131	7.62	20	
1,2-Dibromoethane	21.2900	0.50	20.0000		106	74 - 125	6.30	20	
1,2-Dichlorobenzene	22.3200	0.50	20.0000		112	78 - 122	5.01	20	
1,2-Dichloroethane	20.5800	0.50	20.0000		103	70 - 126	5.08	20	
1,2-Dichloropropane	21.7000	0.50	20.0000		108	69 - 120	4.04	20	
1,3,5-Trimethylbenzene	25.5500	0.50	20.0000		128	73 - 145	2.78	20	
1,3-Dichlorobenzene	22.4200	0.50	20.0000		112	76 - 126	3.73	20	
1,3-Dichloropropane	21.5100	0.50	20.0000		108	76 - 117	3.07	20	
1,4-Dichlorobenzene	21.3700	0.50	20.0000		107	77 - 120	3.04	20	
2,2-Dichloropropane	25.3100	0.50	20.0000		127	47 - 169	1.91	20	
2-Chlorotoluene	24.3200	0.50	20.0000		122	75 - 135	4.93	20	
4-Chlorotoluene	24.3900	0.50	20.0000		122	70 - 133	2.45	20	
4-Isopropyltoluene	24.7300	0.50	20.0000		124	72 - 153	3.04	20	
Benzene	44.6300	0.50	40.0000		112	73 - 123	3.88	20	
Bromobenzene	22.1300	0.50	20.0000		111	75 - 121	2.79	20	
Bromodichloromethane	21.5300	0.50	20.0000		108	73 - 124	3.35	20	
Bromoform	20.1900	0.50	20.0000		101	70 - 135	3.32	20	
Bromomethane	14.6600	0.50	20.0000		73.3	10 - 166	13.5	20	
Carbon tetrachloride	22.7400	0.50	20.0000		114	65 - 171	0.00	20	
Chlorobenzene	21.4500	0.50	20.0000		107	80 - 121	2.65	20	
Chloroethane	18.4400	0.50	20.0000		92.2	55 - 143	4.56	20	
Chloroform	21.1000	0.50	20.0000		106	65 - 130	2.93	20	
Chloromethane	19.6500	0.50	20.0000		98.2	21 - 141	3.36	20	
cis-1,2-Dichloroethene	20.9100	0.50	20.0000		105	64 - 126	3.40	20	
cis-1,3-Dichloropropene	22.3700	0.50	20.0000		112	70 - 131	3.27	20	
Dibromochloromethane	21.9800	0.50	20.0000		110	74 - 125	3.80	20	



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

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

Batch B6F0578 - MSVOA_LL_W (continued)

LCS Dup (B6F0578-BSD1) - Continued

Prepared: 6/21/2016 Analyzed: 6/21/2016

Dibromomethane	21.0800	0.50	20.0000		105	74 - 116	5.76	20	
Dichlorodifluoromethane	24.4500	0.50	20.0000		122	40 - 186	1.61	20	
Ethylbenzene	44.3900	0.50	40.0000		111	77 - 130	2.67	20	
Hexachlorobutadiene	22.6200	0.50	20.0000		113	52 - 176	2.37	20	
Isopropylbenzene	28.1000	0.50	20.0000		140	77 - 144	4.48	20	
m,p-Xylene	50.0400	1.0	40.0000		125	84 - 136	2.10	20	
Methylene chloride	16.5400	1.0	20.0000		82.7	72 - 150	1.89	20	
n-Butylbenzene	25.9500	0.50	20.0000		130	73 - 154	2.69	20	
n-Propylbenzene	25.5100	0.50	20.0000		128	77 - 145	2.14	20	
Naphthalene	20.4000	0.50	20.0000		102	55 - 137	5.96	20	
o-Xylene	47.9600	0.50	40.0000		120	79 - 135	2.66	20	
sec-Butylbenzene	25.9800	0.50	20.0000		130	73 - 157	2.93	20	
Styrene	22.7300	0.50	20.0000		114	78 - 125	2.95	20	
tert-Butylbenzene	26.1200	0.50	20.0000		131	78 - 149	3.98	20	
Tetrachloroethene	23.1000	0.50	20.0000		116	74 - 136	1.53	20	
Toluene	44.7100	0.50	40.0000		112	78 - 124	4.11	20	
trans-1,2-Dichloroethene	21.3900	0.50	20.0000		107	66 - 131	0.798	20	
Trichloroethene	23.5400	0.50	20.0000		118	78 - 128	4.12	20	
Trichlorofluoromethane	26.9500	0.50	20.0000		135	60 - 170	6.32	20	
Vinyl chloride	21.3800	0.50	20.0000		107	55 - 148	4.84	20	
Surrogate: 1,2-Dichloroethane-d4	25.28		25.0000		101	51 - 157			
Surrogate: 4-Bromofluorobenzene	28.12		25.0000		112	61 - 123			
Surrogate: Dibromofluoromethane	25.52		25.0000		102	57 - 147			
Surrogate: Toluene-d8	27.71		25.0000		111	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 Limits	RPD	RPD Limit	Notes

Batch B6F0626 - MSVOA_LL_W

Blank (B6F0626-BLK1)

Prepared: 6/22/2016 Analyzed: 6/22/2016

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 Limit	Notes

Batch B6F0626 - MSVOA_LL_W (continued)

Blank (B6F0626-BLK1) - Continued

Prepared: 6/22/2016 Analyzed: 6/22/2016

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>	<i>27.24</i>		<i>25.0000</i>		<i>109</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>25.83</i>		<i>25.0000</i>		<i>103</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>26.95</i>		<i>25.0000</i>		<i>108</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.47</i>		<i>25.0000</i>		<i>102</i>	<i>61 - 119</i>			

LCS (B6F0626-BS1)

Prepared: 6/22/2016 Analyzed: 6/22/2016

1,1,1,2-Tetrachloroethane	18.5900	0.50	20.0000		93.0	76 - 132			
1,1,1-Trichloroethane	21.2900	0.50	20.0000		106	72 - 144			
1,1,2,2-Tetrachloroethane	17.0900	0.50	20.0000		85.4	70 - 120			
1,1,2-Trichloroethane	17.6200	0.50	20.0000		88.1	75 - 120			
1,1-Dichloroethane	19.4300	0.50	20.0000		97.2	65 - 127			
1,1-Dichloroethene	20.0700	0.50	20.0000		100	63 - 142			
1,1-Dichloropropene	21.0100	0.50	20.0000		105	78 - 137			
1,2,3-Trichloropropane	18.1200	0.50	20.0000		90.6	73 - 118			
1,2,3-Trichlorobenzene	18.5400	0.50	20.0000		92.7	53 - 164			
1,2,4-Trichlorobenzene	19.1000	0.50	20.0000		95.5	58 - 144			
1,2,4-Trimethylbenzene	21.4700	0.50	20.0000		107	75 - 140			
1,2-Dibromo-3-chloropropane	17.1600	0.50	20.0000		85.8	61 - 131			
1,2-Dibromoethane	18.2900	0.50	20.0000		91.4	74 - 125			
1,2-Dichlorobenzene	18.8900	0.50	20.0000		94.4	78 - 122			
1,2-Dichloroethane	18.2900	0.50	20.0000		91.4	70 - 126			
1,2-Dichloropropane	18.0800	0.50	20.0000		90.4	69 - 120			
1,3,5-Trimethylbenzene	21.7600	0.50	20.0000		109	73 - 145			
1,3-Dichlorobenzene	19.1300	0.50	20.0000		95.6	76 - 126			
1,3-Dichloropropane	18.1900	0.50	20.0000		91.0	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 Limit	Notes

Batch B6F0626 - MSVOA_LL_W (continued)

LCS (B6F0626-BS1) - Continued

Prepared: 6/22/2016 Analyzed: 6/22/2016

1,4-Dichlorobenzene	18.4000	0.50	20.0000		92.0	77 - 120			
2,2-Dichloropropane	22.8700	0.50	20.0000		114	47 - 169			
2-Chlorotoluene	20.4400	0.50	20.0000		102	75 - 135			
4-Chlorotoluene	20.7100	0.50	20.0000		104	70 - 133			
4-Isopropyltoluene	20.7800	0.50	20.0000		104	72 - 153			
Benzene	38.1900	0.50	40.0000		95.5	73 - 123			
Bromobenzene	18.8600	0.50	20.0000		94.3	75 - 121			
Bromodichloromethane	18.9000	0.50	20.0000		94.5	73 - 124			
Bromoform	17.4400	0.50	20.0000		87.2	70 - 135			
Bromomethane	13.3300	0.50	20.0000		66.6	10 - 166			
Carbon tetrachloride	20.2600	0.50	20.0000		101	65 - 171			
Chlorobenzene	18.5800	0.50	20.0000		92.9	80 - 121			
Chloroethane	17.9300	0.50	20.0000		89.6	55 - 143			
Chloroform	19.0300	0.50	20.0000		95.2	65 - 130			
Chloromethane	19.4800	0.50	20.0000		97.4	21 - 141			
cis-1,2-Dichloroethene	18.2300	0.50	20.0000		91.2	64 - 126			
cis-1,3-Dichloropropene	19.2300	0.50	20.0000		96.2	70 - 131			
Dibromochloromethane	19.0800	0.50	20.0000		95.4	74 - 125			
Dibromomethane	18.4700	0.50	20.0000		92.4	74 - 116			
Dichlorodifluoromethane	22.7700	0.50	20.0000		114	40 - 186			
Ethylbenzene	38.9100	0.50	40.0000		97.3	77 - 130			
Hexachlorobutadiene	19.3700	0.50	20.0000		96.8	52 - 176			
Isopropylbenzene	23.4200	0.50	20.0000		117	77 - 144			
m,p-Xylene	43.8400	1.0	40.0000		110	84 - 136			
Methylene chloride	15.0000	1.0	20.0000		75.0	72 - 150			
n-Butylbenzene	21.9400	0.50	20.0000		110	73 - 154			
n-Propylbenzene	21.7900	0.50	20.0000		109	77 - 145			
Naphthalene	16.8200	0.50	20.0000		84.1	55 - 137			
o-Xylene	41.8300	0.50	40.0000		105	79 - 135			
sec-Butylbenzene	21.9700	0.50	20.0000		110	73 - 157			
Styrene	19.4100	0.50	20.0000		97.0	78 - 125			
tert-Butylbenzene	22.0600	0.50	20.0000		110	78 - 149			
Tetrachloroethene	19.6200	0.50	20.0000		98.1	74 - 136			
Toluene	39.3100	0.50	40.0000		98.3	78 - 124			
trans-1,2-Dichloroethene	19.0000	0.50	20.0000		95.0	66 - 131			
Trichloroethene	19.3000	0.50	20.0000		96.5	78 - 128			
Trichlorofluoromethane	27.7000	0.50	20.0000		138	60 - 170			
Vinyl chloride	19.9500	0.50	20.0000		99.8	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	26.49		25.0000		106	51 - 157			
Surrogate: 4-Bromofluorobenzene	27.74		25.0000		111	61 - 123			
Surrogate: Dibromofluoromethane	26.43		25.0000		106	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

Batch B6F0626 - MSVOA_LL_W (continued)

LCS (B6F0626-BS1) - Continued

Prepared: 6/22/2016 Analyzed: 6/22/2016

Surrogate: Toluene-d8

27.17

25.0000

109

61 - 119

LCS Dup (B6F0626-BS1)

Prepared: 6/22/2016 Analyzed: 6/22/2016

1,1,1,2-Tetrachloroethane	18.8800	0.50	20.0000	94.4	76 - 132	1.55	20
1,1,1-Trichloroethane	21.6600	0.50	20.0000	108	72 - 144	1.72	20
1,1,2,2-Tetrachloroethane	17.3300	0.50	20.0000	86.6	70 - 120	1.39	20
1,1,2-Trichloroethane	17.4800	0.50	20.0000	87.4	75 - 120	0.798	20
1,1-Dichloroethane	19.9200	0.50	20.0000	99.6	65 - 127	2.49	20
1,1-Dichloroethene	20.3300	0.50	20.0000	102	63 - 142	1.29	20
1,1-Dichloropropene	21.5300	0.50	20.0000	108	78 - 137	2.44	20
1,2,3-Trichloropropane	18.4700	0.50	20.0000	92.4	73 - 118	1.91	20
1,2,3-Trichlorobenzene	19.1600	0.50	20.0000	95.8	53 - 164	3.29	20
1,2,4-Trichlorobenzene	19.7500	0.50	20.0000	98.8	58 - 144	3.35	20
1,2,4-Trimethylbenzene	22.0700	0.50	20.0000	110	75 - 140	2.76	20
1,2-Dibromo-3-chloropropane	16.3700	0.50	20.0000	81.8	61 - 131	4.71	20
1,2-Dibromoethane	18.3300	0.50	20.0000	91.6	74 - 125	0.218	20
1,2-Dichlorobenzene	19.3900	0.50	20.0000	97.0	78 - 122	2.61	20
1,2-Dichloroethane	18.8300	0.50	20.0000	94.2	70 - 126	2.91	20
1,2-Dichloropropane	18.6800	0.50	20.0000	93.4	69 - 120	3.26	20
1,3,5-Trimethylbenzene	22.1300	0.50	20.0000	111	73 - 145	1.69	20
1,3-Dichlorobenzene	19.9100	0.50	20.0000	99.6	76 - 126	4.00	20
1,3-Dichloropropane	18.5000	0.50	20.0000	92.5	76 - 117	1.69	20
1,4-Dichlorobenzene	18.8700	0.50	20.0000	94.4	77 - 120	2.52	20
2,2-Dichloropropane	22.7600	0.50	20.0000	114	47 - 169	0.482	20
2-Chlorotoluene	21.3700	0.50	20.0000	107	75 - 135	4.45	20
4-Chlorotoluene	21.3700	0.50	20.0000	107	70 - 133	3.14	20
4-Isopropyltoluene	21.4900	0.50	20.0000	107	72 - 153	3.36	20
Benzene	39.1700	0.50	40.0000	97.9	73 - 123	2.53	20
Bromobenzene	19.3500	0.50	20.0000	96.8	75 - 121	2.56	20
Bromodichloromethane	19.0400	0.50	20.0000	95.2	73 - 124	0.738	20
Bromoform	17.6800	0.50	20.0000	88.4	70 - 135	1.37	20
Bromomethane	12.5900	0.50	20.0000	63.0	10 - 166	5.71	20
Carbon tetrachloride	20.3900	0.50	20.0000	102	65 - 171	0.640	20
Chlorobenzene	18.7900	0.50	20.0000	94.0	80 - 121	1.12	20
Chloroethane	20.4000	0.50	20.0000	102	55 - 143	12.9	20
Chloroform	19.2800	0.50	20.0000	96.4	65 - 130	1.31	20
Chloromethane	21.1000	0.50	20.0000	106	21 - 141	7.98	20
cis-1,2-Dichloroethene	18.6300	0.50	20.0000	93.2	64 - 126	2.17	20
cis-1,3-Dichloropropene	19.5900	0.50	20.0000	98.0	70 - 131	1.85	20
Dibromochloromethane	19.4800	0.50	20.0000	97.4	74 - 125	2.07	20
Dibromomethane	18.3200	0.50	20.0000	91.6	74 - 116	0.815	20
Dichlorodifluoromethane	22.6000	0.50	20.0000	113	40 - 186	0.749	20



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

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

Batch B6F0626 - MSVOA_LL_W (continued)

LCS Dup (B6F0626-BSD1) - Continued

Prepared: 6/22/2016 Analyzed: 6/22/2016

Ethylbenzene	39.6100	0.50	40.0000		99.0	77 - 130	1.78	20	
Hexachlorobutadiene	20.0700	0.50	20.0000		100	52 - 176	3.55	20	
Isopropylbenzene	24.1500	0.50	20.0000		121	77 - 144	3.07	20	
m,p-Xylene	44.6100	1.0	40.0000		112	84 - 136	1.74	20	
Methylene chloride	14.8900	1.0	20.0000		74.4	72 - 150	0.736	20	
n-Butylbenzene	22.6600	0.50	20.0000		113	73 - 154	3.23	20	
n-Propylbenzene	22.4000	0.50	20.0000		112	77 - 145	2.76	20	
Naphthalene	17.1400	0.50	20.0000		85.7	55 - 137	1.88	20	
o-Xylene	42.7600	0.50	40.0000		107	79 - 135	2.20	20	
sec-Butylbenzene	22.7900	0.50	20.0000		114	73 - 157	3.66	20	
Styrene	19.9700	0.50	20.0000		99.8	78 - 125	2.84	20	
tert-Butylbenzene	22.7600	0.50	20.0000		114	78 - 149	3.12	20	
Tetrachloroethene	20.4100	0.50	20.0000		102	74 - 136	3.95	20	
Toluene	40.1100	0.50	40.0000		100	78 - 124	2.01	20	
trans-1,2-Dichloroethene	19.2100	0.50	20.0000		96.0	66 - 131	1.10	20	
Trichloroethene	19.5200	0.50	20.0000		97.6	78 - 128	1.13	20	
Trichlorofluoromethane	28.7100	0.50	20.0000		144	60 - 170	3.58	20	
Vinyl chloride	20.2000	0.50	20.0000		101	55 - 148	1.25	20	
Surrogate: 1,2-Dichloroethane-d4	25.33		25.0000		101	51 - 157			
Surrogate: 4-Bromofluorobenzene	27.54		25.0000		110	61 - 123			
Surrogate: Dibromofluoromethane	26.13		25.0000		105	57 - 147			
Surrogate: Toluene-d8	27.20		25.0000		109	61 - 119			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

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

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

Batch B6F0553 - MSSEMI_ISOTOPEDILN_W

Blank (B6F0553-BLK1)

Prepared: 6/20/2016 Analyzed: 6/20/2016

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	52.63		100.000		52.6	42 - 106			
Surrogate: 2-Fluorobiphenyl	65.78		100.000		65.8	55 - 117			
Surrogate: 4-Terphenyl-d14	93.63		100.000		93.6	52 - 142			
Surrogate: Nitrobenzene-d5	59.50		100.000		59.5	43 - 116			

LCS (B6F0553-BS1)

Prepared: 6/20/2016 Analyzed: 6/20/2016

1,4-Dioxane	93.5500	2.0	100.000		93.6	62 - 127			
Surrogate: 1,2-Dichlorobenzene-d4	64.76		100.000		64.8	42 - 106			
Surrogate: 2-Fluorobiphenyl	76.71		100.000		76.7	55 - 117			
Surrogate: 4-Terphenyl-d14	93.57		100.000		93.6	52 - 142			
Surrogate: Nitrobenzene-d5	71.99		100.000		72.0	43 - 116			

LCS Dup (B6F0553-BS1)

Prepared: 6/20/2016 Analyzed: 6/20/2016

1,4-Dioxane	97.2400	2.0	100.000		97.2	62 - 127	3.87	20	
Surrogate: 1,2-Dichlorobenzene-d4	60.94		100.000		60.9	42 - 106			
Surrogate: 2-Fluorobiphenyl	75.29		100.000		75.3	55 - 117			
Surrogate: 4-Terphenyl-d14	92.50		100.000		92.5	52 - 142			
Surrogate: Nitrobenzene-d5	68.72		100.000		68.7	43 - 116			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

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	% Rec Limits	RPD	RPD Limit	Notes

Batch B6F0593 - MSSEMI_W

Blank (B6F0593-BLK1)

Prepared: 6/21/2016 Analyzed: 6/23/2016

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.6137		1.00000		61.4	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.6959		1.00000		69.6	28 - 122			
Surrogate: 4-Terphenyl-d14	0.6335		1.00000		63.4	43 - 131			
Surrogate: Nitrobenzene-d5	0.6268		1.00000		62.7	20 - 119			

LCS (B6F0593-BS1)

Prepared: 6/21/2016 Analyzed: 6/23/2016

1,4-Dioxane	1.12453	0.20	1.00000		112	49 - 169			
Surrogate: 1,2-Dichlorobenzene-d4	0.6338		1.00000		63.4	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.7171		1.00000		71.7	28 - 122			
Surrogate: 4-Terphenyl-d14	0.6526		1.00000		65.3	43 - 131			
Surrogate: Nitrobenzene-d5	0.6314		1.00000		63.1	20 - 119			

LCS Dup (B6F0593-BSD1)

Prepared: 6/21/2016 Analyzed: 6/23/2016

1,4-Dioxane	1.19431	0.20	1.00000		119	49 - 169	6.02	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.5898		1.00000		59.0	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.6963		1.00000		69.6	28 - 122			
Surrogate: 4-Terphenyl-d14	0.5792		1.00000		57.9	43 - 131			
Surrogate: Nitrobenzene-d5	0.5709		1.00000		57.1	20 - 119			



Certificate of Analysis

Hargis & Associates, Inc.

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San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 06/24/2016

Notes and Definitions

E1	Result value is above calibration range and therefore, estimated. Reanalysis is not possible due to insufficient 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.



HARGIS+ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

Date: 6/16/16
Page 1 of 1

PROJECT: Raytheon Main GETS Mid Month 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		MATRIX		PRESERVATION		CONTAINERS		ANALYSIS REQUESTED		Expected Concentration Range (ppb) for VOA's		SPECIAL HANDLING		Laboratory																			
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	15 Day TAT	Level IV Data Validation Requested	MS/MSD Requested	REMARKS		
1602150-1	TB-061616	6/16/2016	7:00	X	X					X	2						X																				
-2	CEFF		8:10	X	X					X	3					1	X									X	X										
-3	CBT		8:17	X	X					X	3					1	X									X	X										
-4	POX		8:20	X	X					X	3					1	X									X	X										
-5	INF		8:25	X	X					X	3					1	X							X				X									
-6	EW-02		9:05	X	X					X	3					1	X							X			X										
-7	MW-29		9:15	X	X					X	3					1	X							X			X										
Total number of containers per analysis:											20						6	Total No. of Containers: 26																			
Relinquished By: / Company:		Date / Time		Received By: / Company		Date / Time																															
<u>Kevin Fong HAA</u>		<u>6/16/16 10:20</u>		<u>Steve Netto</u>		<u>6/16/16 10:20</u>																															
Relinquished By: / Company:		Date / Time		Received By: / Company		Date / Time																															
<u>Steve Netto</u>		<u>6/16/16</u>		<u>PROW</u>		<u>6/16/16 1338</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.

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

7.2 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



July 28, 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 : 1602373

Client Reference : Raytheon Main GETS Monthly Sample, 532.15

Enclosed are the results for sample(s) received on July 07, 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,

A handwritten signature in black ink, appearing to read "E Rodriguez", is written over a light blue horizontal line.

Eddie Rodriguez
Laboratory Director

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



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 07/28/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-070716	1602373-01	Lab prepared water	7/07/16 7:00	7/07/16 10:32
CEFF	1602373-02	Groundwater	7/07/16 7:58	7/07/16 10:32
CBT	1602373-03	Groundwater	7/07/16 8:20	7/07/16 10:32
POX	1602373-04	Groundwater	7/07/16 8:05	7/07/16 10:32
PF	1602373-05	Groundwater	7/07/16 8:10	7/07/16 10:32
INF	1602373-06	Groundwater	7/07/16 8:22	7/07/16 10:32
EW-02	1602373-07	Groundwater	7/07/16 9:11	7/07/16 10:32
MW-29	1602373-08	Groundwater	7/07/16 9:29	7/07/16 10:32

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 : 07/28/2016

Client Sample ID TB-070716

Lab ID: 1602373-01

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,1,1-Trichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,1,2-Trichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,1-Dichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,1-Dichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,1-Dichloropropene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,2,3-Trichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,2,3-Trichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,2,4-Trichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,2,4-Trimethylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,2-Dibromoethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,2-Dichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,2-Dichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,2-Dichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,3,5-Trimethylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,3-Dichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,3-Dichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
1,4-Dichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
2,2-Dichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
2-Chlorotoluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
4-Chlorotoluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
4-Isopropyltoluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Benzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Bromobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Bromodichloromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Bromoform	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Bromomethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Carbon tetrachloride	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Chlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Chloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Chloroform	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Chloromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
cis-1,2-Dichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
cis-1,3-Dichloropropene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Dibromochloromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	



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 : 07/28/2016

Client Sample ID TB-070716

Lab ID: 1602373-01

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Dichlorodifluoromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Ethylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Hexachlorobutadiene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Isopropylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
m,p-Xylene	ND	1.0	1	B6G0319	07/14/2016	07/14/16 18:59	
Methylene chloride	ND	1.0	1	B6G0319	07/14/2016	07/14/16 18:59	
n-Butylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
n-Propylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Naphthalene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
o-Xylene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
sec-Butylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Styrene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
tert-Butylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Tetrachloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Toluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
trans-1,2-Dichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Trichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Trichlorofluoromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Vinyl chloride	ND	0.50	1	B6G0319	07/14/2016	07/14/16 18:59	
Surrogate: 1,2-Dichloroethane-d4	115 %	51 - 157		B6G0319	07/14/2016	07/14/16 18:59	
Surrogate: 4-Bromofluorobenzene	96.0 %	61 - 123		B6G0319	07/14/2016	07/14/16 18:59	
Surrogate: Dibromofluoromethane	97.9 %	57 - 147		B6G0319	07/14/2016	07/14/16 18:59	
Surrogate: Toluene-d8	98.1 %	61 - 119		B6G0319	07/14/2016	07/14/16 18:59	



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 : 07/28/2016

Client Sample ID CEFF

Lab ID: 1602373-02

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,1,1-Trichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,1,2-Trichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,1-Dichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,1-Dichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,1-Dichloropropene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,2,3-Trichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,2,3-Trichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,2,4-Trichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,2,4-Trimethylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,2-Dibromoethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,2-Dichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,2-Dichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,2-Dichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,3,5-Trimethylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,3-Dichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,3-Dichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
1,4-Dichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
2,2-Dichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
2-Chlorotoluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
4-Chlorotoluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
4-Isopropyltoluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Benzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Bromobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Bromodichloromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Bromoform	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Bromomethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Carbon tetrachloride	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Chlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Chloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Chloroform	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Chloromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
cis-1,2-Dichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
cis-1,3-Dichloropropene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Dibromochloromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	



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 : 07/28/2016

Client Sample ID CEFF

Lab ID: 1602373-02

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Dichlorodifluoromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Ethylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Hexachlorobutadiene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Isopropylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
m,p-Xylene	ND	1.0	1	B6G0319	07/14/2016	07/14/16 19:23	
Methylene chloride	ND	1.0	1	B6G0319	07/14/2016	07/14/16 19:23	
n-Butylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
n-Propylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Naphthalene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
o-Xylene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
sec-Butylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Styrene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
tert-Butylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Tetrachloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Toluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
trans-1,2-Dichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Trichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Trichlorofluoromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Vinyl chloride	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:23	
Surrogate: 1,2-Dichloroethane-d4	116 %	51 - 157		B6G0319	07/14/2016	07/14/16 19:23	
Surrogate: 4-Bromofluorobenzene	96.7 %	61 - 123		B6G0319	07/14/2016	07/14/16 19:23	
Surrogate: Dibromofluoromethane	106 %	57 - 147		B6G0319	07/14/2016	07/14/16 19:23	
Surrogate: Toluene-d8	99.8 %	61 - 119		B6G0319	07/14/2016	07/14/16 19:23	



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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 : 07/28/2016

Client Sample ID CEFF

Lab ID: 1602373-02

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	B6G0184	07/11/2016	07/11/16 12:13	
Surrogate: 1,2-Dichlorobenzene-d4	77.0 %	31 - 106		B6G0184	07/11/2016	07/11/16 12:13	
Surrogate: 2-Fluorobiphenyl	71.6 %	28 - 122		B6G0184	07/11/2016	07/11/16 12:13	
Surrogate: 4-Terphenyl-d14	79.0 %	43 - 131		B6G0184	07/11/2016	07/11/16 12:13	
Surrogate: Nitrobenzene-d5	50.4 %	20 - 119		B6G0184	07/11/2016	07/11/16 12:13	



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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 : 07/28/2016

Client Sample ID CBT

Lab ID: 1602373-03

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,1,1-Trichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,1,2-Trichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,1-Dichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,1-Dichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,1-Dichloropropene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,2,3-Trichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,2,3-Trichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,2,4-Trichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,2,4-Trimethylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,2-Dibromoethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,2-Dichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,2-Dichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,2-Dichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,3,5-Trimethylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,3-Dichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,3-Dichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
1,4-Dichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
2,2-Dichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
2-Chlorotoluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
4-Chlorotoluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
4-Isopropyltoluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Benzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Bromobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Bromodichloromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Bromoform	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Bromomethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Carbon tetrachloride	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Chlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Chloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Chloroform	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Chloromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
cis-1,2-Dichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
cis-1,3-Dichloropropene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Dibromochloromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	



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 : 07/28/2016

Client Sample ID CBT

Lab ID: 1602373-03

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Dichlorodifluoromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Ethylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Hexachlorobutadiene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Isopropylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
m,p-Xylene	ND	1.0	1	B6G0319	07/14/2016	07/14/16 19:47	
Methylene chloride	ND	1.0	1	B6G0319	07/14/2016	07/14/16 19:47	
n-Butylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
n-Propylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Naphthalene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
o-Xylene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
sec-Butylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Styrene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
tert-Butylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Tetrachloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Toluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
trans-1,2-Dichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Trichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Trichlorofluoromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Vinyl chloride	ND	0.50	1	B6G0319	07/14/2016	07/14/16 19:47	
Surrogate: 1,2-Dichloroethane-d4	114 %	51 - 157		B6G0319	07/14/2016	07/14/16 19:47	
Surrogate: 4-Bromofluorobenzene	96.7 %	61 - 123		B6G0319	07/14/2016	07/14/16 19:47	
Surrogate: Dibromofluoromethane	95.7 %	57 - 147		B6G0319	07/14/2016	07/14/16 19:47	
Surrogate: Toluene-d8	100 %	61 - 119		B6G0319	07/14/2016	07/14/16 19:47	



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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 : 07/28/2016

Client Sample ID CBT

Lab ID: 1602373-03

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	B6G0184	07/11/2016	07/11/16 12:40	
Surrogate: 1,2-Dichlorobenzene-d4	86.2 %	31 - 106		B6G0184	07/11/2016	07/11/16 12:40	
Surrogate: 2-Fluorobiphenyl	82.1 %	28 - 122		B6G0184	07/11/2016	07/11/16 12:40	
Surrogate: 4-Terphenyl-d14	84.6 %	43 - 131		B6G0184	07/11/2016	07/11/16 12:40	
Surrogate: Nitrobenzene-d5	61.3 %	20 - 119		B6G0184	07/11/2016	07/11/16 12:40	



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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 : 07/28/2016

Client Sample ID POX

Lab ID: 1602373-04

Alkalinity, Speciated by SM 2320B

Analyst: QD

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO ₃)	230	5.0	1	B6G0346	07/14/2016	07/15/16 14:09	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B6G0346	07/14/2016	07/15/16 14:09	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B6G0346	07/14/2016	07/15/16 14:09	
Alkalinity, Total (as CaCO ₃)	230	5.0	1	B6G0346	07/14/2016	07/15/16 14:09	

Total Organic Carbon by SM 5310B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	1	B6G0323	07/13/2016	07/13/16 13:35	

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,1,1-Trichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,1,2-Trichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,1-Dichloroethane	0.61	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,1-Dichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,1-Dichloropropene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,2,3-Trichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,2,3-Trichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,2,4-Trichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,2,4-Trimethylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,2-Dibromoethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,2-Dichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,2-Dichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,2-Dichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,3,5-Trimethylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,3-Dichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,3-Dichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
1,4-Dichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
2,2-Dichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
2-Chlorotoluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	



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 : 07/28/2016

Client Sample ID POX

Lab ID: 1602373-04

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
4-Isopropyltoluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Benzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Bromobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Bromodichloromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Bromoform	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Bromomethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Carbon tetrachloride	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Chlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Chloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Chloroform	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Chloromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
cis-1,2-Dichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
cis-1,3-Dichloropropene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Dibromochloromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Dibromomethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Dichlorodifluoromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Ethylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Hexachlorobutadiene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Isopropylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
m,p-Xylene	ND	1.0	1	B6G0319	07/14/2016	07/14/16 20:12	
Methylene chloride	ND	1.0	1	B6G0319	07/14/2016	07/14/16 20:12	
n-Butylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
n-Propylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Naphthalene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
o-Xylene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
sec-Butylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Styrene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
tert-Butylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Tetrachloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Toluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
trans-1,2-Dichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Trichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Trichlorofluoromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	
Vinyl chloride	ND	0.50	1	B6G0319	07/14/2016	07/14/16 20:12	

Surrogate: 1,2-Dichloroethane-d4

113 %

51 - 157

B6G0319

07/14/2016

07/14/16 20:12

Surrogate: 4-Bromofluorobenzene

94.8 %

61 - 123

B6G0319

07/14/2016

07/14/16 20:12



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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 : 07/28/2016

Client Sample ID POX

Lab ID: 1602373-04

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: Dibromofluoromethane	95.4 %	57 - 147		B6G0319	07/14/2016	07/14/16 20:12	
Surrogate: Toluene-d8	97.5 %	61 - 119		B6G0319	07/14/2016	07/14/16 20:12	

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	ND	0.20	1	B6G0184	07/11/2016	07/11/16 13:08	
Surrogate: 1,2-Dichlorobenzene-d4	62.0 %	31 - 106		B6G0184	07/11/2016	07/11/16 13:08	
Surrogate: 2-Fluorobiphenyl	59.3 %	28 - 122		B6G0184	07/11/2016	07/11/16 13:08	
Surrogate: 4-Terphenyl-d14	72.7 %	43 - 131		B6G0184	07/11/2016	07/11/16 13:08	
Surrogate: Nitrobenzene-d5	45.2 %	20 - 119		B6G0184	07/11/2016	07/11/16 13:08	



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID PF

Lab ID: 1602373-05

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	B6G0327	07/08/2016	07/08/16 16:29	

Alkalinity, Speciated by SM 2320B

Analyst: QD

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Bicarbonate (as CaCO ₃)	230	5.0	1	B6G0346	07/14/2016	07/15/16 14:09	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B6G0346	07/14/2016	07/15/16 14:09	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B6G0346	07/14/2016	07/15/16 14:09	
Alkalinity, Total (as CaCO ₃)	230	5.0	1	B6G0346	07/14/2016	07/15/16 14:09	

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

Analyst: AM2

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	ND	1.0	1	B6G0222	07/12/2016	07/12/16 08:15	

Total Organic Carbon by SM 5310B

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	1	B6G0323	07/13/2016	07/13/16 13:56	



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID INF

Lab ID: 1602373-06

Bromide by Ion Chromatography EPA 300

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.29	0.05	1	B6G0238	07/11/2016	07/11/16 14:38	

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,1,1-Trichloroethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,1,2-Trichloroethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,1-Dichloroethane	0.96	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,1-Dichloroethene	88	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,1-Dichloropropene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,2,3-Trichloropropane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,2,3-Trichlorobenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,2,4-Trichlorobenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,2,4-Trimethylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,2-Dibromoethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,2-Dichlorobenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,2-Dichloroethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,2-Dichloropropane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,3,5-Trimethylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,3-Dichlorobenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,3-Dichloropropane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
1,4-Dichlorobenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
2,2-Dichloropropane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
2-Chlorotoluene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
4-Chlorotoluene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
4-Isopropyltoluene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Benzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Bromobenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Bromodichloromethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Bromoform	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Bromomethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Carbon tetrachloride	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Chlorobenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	



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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 : 07/28/2016

Client Sample ID INF

Lab ID: 1602373-06

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Chloroform	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Chloromethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
cis-1,2-Dichloroethene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
cis-1,3-Dichloropropene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Dibromochloromethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Dibromomethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Dichlorodifluoromethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Ethylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Hexachlorobutadiene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Isopropylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
m,p-Xylene	ND	1.0	1	B6G0332	07/15/2016	07/15/16 11:40	
Methylene chloride	ND	1.0	1	B6G0332	07/15/2016	07/15/16 11:40	
n-Butylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
n-Propylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Naphthalene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
o-Xylene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
sec-Butylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Styrene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
tert-Butylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Tetrachloroethene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Toluene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
trans-1,2-Dichloroethene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Trichloroethene	0.80	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Trichlorofluoromethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
Vinyl chloride	ND	0.50	1	B6G0332	07/15/2016	07/15/16 11:40	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>115 %</i>	<i>51 - 157</i>		B6G0332	07/15/2016	<i>07/15/16 11:40</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.2 %</i>	<i>61 - 123</i>		B6G0332	07/15/2016	<i>07/15/16 11:40</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>100 %</i>	<i>57 - 147</i>		B6G0332	07/15/2016	<i>07/15/16 11:40</i>	
<i>Surrogate: Toluene-d8</i>	<i>95.0 %</i>	<i>61 - 119</i>		B6G0332	07/15/2016	<i>07/15/16 11:40</i>	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID INF

Lab ID: 1602373-06

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	25	2.0	1	B6G0161	07/08/2016	07/08/16 16:06	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>60.4 %</i>	<i>42 - 106</i>		B6G0161	07/08/2016	<i>07/08/16 16:06</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>70.5 %</i>	<i>55 - 117</i>		B6G0161	07/08/2016	<i>07/08/16 16:06</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>95.2 %</i>	<i>52 - 142</i>		B6G0161	07/08/2016	<i>07/08/16 16:06</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>77.0 %</i>	<i>43 - 116</i>		B6G0161	07/08/2016	<i>07/08/16 16:06</i>	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID EW-02

Lab ID: 1602373-07

Bromide by Ion Chromatography EPA 300

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.32	0.05	1	B6G0238	07/11/2016	07/11/16 14:49	

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,1,1-Trichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,1,2-Trichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,1-Dichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,1-Dichloroethene	30	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,1-Dichloropropene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,2,3-Trichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,2,3-Trichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,2,4-Trichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,2,4-Trimethylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,2-Dibromoethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,2-Dichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,2-Dichloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,2-Dichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,3,5-Trimethylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,3-Dichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,3-Dichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
1,4-Dichlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
2,2-Dichloropropane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
2-Chlorotoluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
4-Chlorotoluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
4-Isopropyltoluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Benzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Bromobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Bromodichloromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Bromoform	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Bromomethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Carbon tetrachloride	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Chlorobenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID EW-02

Lab ID: 1602373-07

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Chloroform	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Chloromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
cis-1,2-Dichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
cis-1,3-Dichloropropene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Dibromochloromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Dibromomethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Dichlorodifluoromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Ethylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Hexachlorobutadiene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Isopropylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
m,p-Xylene	ND	1.0	1	B6G0319	07/14/2016	07/14/16 21:49	
Methylene chloride	ND	1.0	1	B6G0319	07/14/2016	07/14/16 21:49	
n-Butylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
n-Propylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Naphthalene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
o-Xylene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
sec-Butylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Styrene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
tert-Butylbenzene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Tetrachloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Toluene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
trans-1,2-Dichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Trichloroethene	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Trichlorofluoromethane	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
Vinyl chloride	ND	0.50	1	B6G0319	07/14/2016	07/14/16 21:49	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>116 %</i>	<i>51 - 157</i>		B6G0319	07/14/2016	07/14/16 21:49	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.8 %</i>	<i>61 - 123</i>		B6G0319	07/14/2016	07/14/16 21:49	
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>	<i>57 - 147</i>		B6G0319	07/14/2016	07/14/16 21:49	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6G0319	07/14/2016	07/14/16 21:49	



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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 : 07/28/2016

Client Sample ID EW-02

Lab ID: 1602373-07

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	7.3	2.0	1	B6G0161	07/08/2016	07/08/16 16:34	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>51.2 %</i>	<i>42 - 106</i>		<i>B6G0161</i>	<i>07/08/2016</i>	<i>07/08/16 16:34</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>60.8 %</i>	<i>55 - 117</i>		<i>B6G0161</i>	<i>07/08/2016</i>	<i>07/08/16 16:34</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>92.8 %</i>	<i>52 - 142</i>		<i>B6G0161</i>	<i>07/08/2016</i>	<i>07/08/16 16:34</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>64.4 %</i>	<i>43 - 116</i>		<i>B6G0161</i>	<i>07/08/2016</i>	<i>07/08/16 16:34</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 : 07/28/2016

Client Sample ID MW-29

Lab ID: 1602373-08

Bromide by Ion Chromatography EPA 300

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.66	0.05	1	B6G0238	07/11/2016	07/11/16 15:01	

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,1,1-Trichloroethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,1,2-Trichloroethane	1.1	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,1-Dichloroethane	3.3	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,1-Dichloroethene	310	5.0	10	B6G0319	07/15/2016	07/15/16 01:03	
1,1-Dichloropropene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,2,3-Trichloropropane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,2,3-Trichlorobenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,2,4-Trichlorobenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,2,4-Trimethylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,2-Dibromoethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,2-Dichlorobenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,2-Dichloroethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,2-Dichloropropane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,3,5-Trimethylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,3-Dichlorobenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,3-Dichloropropane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
1,4-Dichlorobenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
2,2-Dichloropropane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
2-Chlorotoluene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
4-Chlorotoluene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
4-Isopropyltoluene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Benzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Bromobenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Bromodichloromethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Bromoform	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Bromomethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Carbon tetrachloride	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Chlorobenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID MW-29

Lab ID: 1602373-08

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Chloroform	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Chloromethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
cis-1,2-Dichloroethene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
cis-1,3-Dichloropropene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Dibromochloromethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Dibromomethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Dichlorodifluoromethane	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Ethylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Hexachlorobutadiene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Isopropylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
m,p-Xylene	ND	1.0	1	B6G0332	07/15/2016	07/15/16 12:05	
Methylene chloride	ND	1.0	1	B6G0332	07/15/2016	07/15/16 12:05	
n-Butylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
n-Propylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Naphthalene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
o-Xylene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
sec-Butylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Styrene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
tert-Butylbenzene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Tetrachloroethene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Toluene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
trans-1,2-Dichloroethene	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Trichloroethene	3.1	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Trichlorofluoromethane	1.5	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	
Vinyl chloride	ND	0.50	1	B6G0332	07/15/2016	07/15/16 12:05	

Surrogate: 1,2-Dichloroethane-d4	114 %	51 - 157	B6G0319	07/15/2016	07/15/16 01:03
Surrogate: 1,2-Dichloroethane-d4	119 %	51 - 157	B6G0332	07/15/2016	07/15/16 12:05
Surrogate: 4-Bromofluorobenzene	98.2 %	61 - 123	B6G0319	07/15/2016	07/15/16 01:03
Surrogate: 4-Bromofluorobenzene	96.8 %	61 - 123	B6G0332	07/15/2016	07/15/16 12:05
Surrogate: Dibromofluoromethane	104 %	57 - 147	B6G0332	07/15/2016	07/15/16 12:05
Surrogate: Dibromofluoromethane	100 %	57 - 147	B6G0319	07/15/2016	07/15/16 01:03
Surrogate: Toluene-d8	101 %	61 - 119	B6G0332	07/15/2016	07/15/16 12:05
Surrogate: Toluene-d8	99.3 %	61 - 119	B6G0319	07/15/2016	07/15/16 01:03



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID MW-29

Lab ID: 1602373-08

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	95	2.0	1	B6G0161	07/08/2016	07/08/16 17:02	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>60.8 %</i>	<i>42 - 106</i>		B6G0161	07/08/2016	<i>07/08/16 17:02</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>72.1 %</i>	<i>55 - 117</i>		B6G0161	07/08/2016	<i>07/08/16 17:02</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>89.5 %</i>	<i>52 - 142</i>		B6G0161	07/08/2016	<i>07/08/16 17:02</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>76.6 %</i>	<i>43 - 116</i>		B6G0161	07/08/2016	<i>07/08/16 17:02</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

Batch B6G0346 - No_Prep_WC1_W

Blank (B6G0346-BLK1)

Prepared: 7/14/2016 Analyzed: 7/15/2016

Alkalinity, Bicarbonate (as CaCO ₃)	ND	5.0			NR				
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0			NR				
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0			NR				
Alkalinity, Total (as CaCO ₃)	ND	5.0			NR				

LCS (B6G0346-BS1)

Prepared: 7/14/2016 Analyzed: 7/15/2016

Alkalinity, Total (as CaCO ₃)	100.810	5.0	99.9580		101	80 - 120			

LCS Dup (B6G0346-BS1)

Prepared: 7/14/2016 Analyzed: 7/15/2016

Alkalinity, Total (as CaCO ₃)	102.820	5.0	99.9580		103	80 - 120	1.97	20	

Matrix Spike (B6G0346-MS1)

Source: 1602373-05

Prepared: 7/14/2016 Analyzed: 7/15/2016

Alkalinity, Total (as CaCO ₃)	421.370	5.0	199.916	227.820	96.8	80 - 120			

Matrix Spike Dup (B6G0346-MS1)

Source: 1602373-05

Prepared: 7/14/2016 Analyzed: 7/15/2016

Alkalinity, Total (as CaCO ₃)	423.390	5.0	199.916	227.820	97.8	80 - 120	0.478	20	



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

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

Batch B6G0222 - No_Prep_WC1_W

Blank (B6G0222-BLK1)

Prepared: 7/12/2016 Analyzed: 7/12/2016

Residue, Suspended

ND

1.0

NR

LCS (B6G0222-BS1)

Prepared: 7/12/2016 Analyzed: 7/12/2016

Residue, Suspended

77.0000

10

92.1000

83.6

80 - 120

Duplicate (B6G0222-DUP1)

Source: 1602391-01

Prepared: 7/12/2016 Analyzed: 7/12/2016

Residue, Suspended

262.500

25

282.500

NR

7.34

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 B6G0238 - No_Prep_IC1_W

Blank (B6G0238-BLK1)

Prepared: 7/11/2016 Analyzed: 7/11/2016

Bromide ND 0.05 NR

LCS (B6G0238-BS1)

Prepared: 7/11/2016 Analyzed: 7/11/2016

Bromide 1.00300 0.05 1.00000 100 90 - 110

Duplicate (B6G0238-DUP1)

Source: 1602385-03

Prepared: 7/11/2016 Analyzed: 7/11/2016

Bromide ND 10 ND NR 20

Matrix Spike (B6G0238-MS1)

Source: 1602385-03

Prepared: 7/11/2016 Analyzed: 7/11/2016

Bromide 2.71900 2.50000 0.00000 109 80 - 120

Matrix Spike Dup (B6G0238-MSD1)

Source: 1602385-03

Prepared: 7/11/2016 Analyzed: 7/11/2016

Bromide 2.72340 2.50000 0.00000 109 80 - 120 0.162 20



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Project Number : Raytheon Main GETS Monthly Sample, 5

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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	% Rec Limits	RPD	RPD Limit	Notes

Batch B6G0327 - No_Prep_II_W

Blank (B6G0327-BLK1)

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

UV Absorption

ND

0.01

NR

Duplicate (B6G0327-DUP1)

Source: 1602373-05

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

UV Absorption

ND

0.01

ND

NR

20



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Project Number : Raytheon Main GETS Monthly Sample, 5

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Total Organic Carbon by SM 5310B - Quality Control

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

Batch B6G0323 - No_Prep_II_W

Blank (B6G0323-BLK1)

Prepared: 7/13/2016 Analyzed: 7/13/2016

Organic Carbon, Total

ND

3.0

NR

LCS (B6G0323-BS1)

Prepared: 7/13/2016 Analyzed: 7/13/2016

Organic Carbon, Total

16.2800

3.0

15.0000

109

80 - 120

LCS Dup (B6G0323-BSD1)

Prepared: 7/13/2016 Analyzed: 7/13/2016

Organic Carbon, Total

15.5100

3.0

15.0000

103

80 - 120

4.84

20



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Report To : Steve Netto

Reported : 07/28/2016

Volatile Organic Compounds by EPA 8260B - Quality Control

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

Batch B6G0319 - MSVOA_LL_W

Blank (B6G0319-BLK1)

Prepared: 7/14/2016 Analyzed: 7/14/2016

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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Project Number : Raytheon Main GETS Monthly Sample, 5

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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

Batch B6G0319 - MSVOA_LL_W (continued)

Blank (B6G0319-BLK1) - Continued

Prepared: 7/14/2016 Analyzed: 7/14/2016

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				

Surrogate: 1,2-Dichloroethane-d4	28.34		25.0000		113	51 - 157			
Surrogate: 4-Bromofluorobenzene	24.27		25.0000		97.1	61 - 123			
Surrogate: Dibromofluoromethane	24.24		25.0000		97.0	57 - 147			
Surrogate: Toluene-d8	24.94		25.0000		99.8	61 - 119			

LCS (B6G0319-BS1)

Prepared: 7/14/2016 Analyzed: 7/14/2016

1,1,1,2-Tetrachloroethane	19.2700	0.50	20.0000		96.4	76 - 132			
1,1,1-Trichloroethane	16.0600	0.50	20.0000		80.3	72 - 144			
1,1,2,2-Tetrachloroethane	17.3000	0.50	20.0000		86.5	70 - 120			
1,1,2-Trichloroethane	18.0200	0.50	20.0000		90.1	75 - 120			
1,1-Dichloroethane	18.9900	0.50	20.0000		95.0	65 - 127			
1,1-Dichloroethene	16.9500	0.50	20.0000		84.8	63 - 142			
1,1-Dichloropropene	16.1700	0.50	20.0000		80.8	78 - 137			
1,2,3-Trichloropropane	18.1100	0.50	20.0000		90.6	73 - 118			
1,2,3-Trichlorobenzene	18.4500	0.50	20.0000		92.2	53 - 164			
1,2,4-Trichlorobenzene	18.3300	0.50	20.0000		91.6	58 - 144			
1,2,4-Trimethylbenzene	18.8800	0.50	20.0000		94.4	75 - 140			
1,2-Dibromo-3-chloropropane	18.3500	0.50	20.0000		91.8	61 - 131			
1,2-Dibromoethane	17.9200	0.50	20.0000		89.6	74 - 125			
1,2-Dichlorobenzene	18.6400	0.50	20.0000		93.2	78 - 122			
1,2-Dichloroethane	18.5700	0.50	20.0000		92.8	70 - 126			
1,2-Dichloropropane	16.8400	0.50	20.0000		84.2	69 - 120			
1,3,5-Trimethylbenzene	19.0900	0.50	20.0000		95.4	73 - 145			
1,3-Dichlorobenzene	18.7200	0.50	20.0000		93.6	76 - 126			
1,3-Dichloropropane	17.0400	0.50	20.0000		85.2	76 - 117			



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 07/28/2016

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

Batch B6G0319 - MSVOA_LL_W (continued)

LCS (B6G0319-BS1) - Continued

Prepared: 7/14/2016 Analyzed: 7/14/2016

1,4-Dichlorobenzene	18.7000	0.50	20.0000		93.5	77 - 120			
2,2-Dichloropropane	16.9100	0.50	20.0000		84.6	47 - 169			
2-Chlorotoluene	18.7300	0.50	20.0000		93.6	75 - 135			
4-Chlorotoluene	18.8700	0.50	20.0000		94.4	70 - 133			
4-Isopropyltoluene	19.0700	0.50	20.0000		95.4	72 - 153			
Benzene	31.7200	0.50	40.0000		79.3	73 - 123			
Bromobenzene	18.7100	0.50	20.0000		93.6	75 - 121			
Bromodichloromethane	18.3700	0.50	20.0000		91.8	73 - 124			
Bromoform	20.2300	0.50	20.0000		101	70 - 135			
Bromomethane	14.6200	0.50	20.0000		73.1	10 - 166			
Carbon tetrachloride	18.5600	0.50	20.0000		92.8	65 - 171			
Chlorobenzene	18.3300	0.50	20.0000		91.6	80 - 121			
Chloroethane	15.5500	0.50	20.0000		77.8	55 - 143			
Chloroform	19.3500	0.50	20.0000		96.8	65 - 130			
Chloromethane	15.6500	0.50	20.0000		78.2	21 - 141			
cis-1,2-Dichloroethene	17.8800	0.50	20.0000		89.4	64 - 126			
cis-1,3-Dichloropropene	18.3500	0.50	20.0000		91.8	70 - 131			
Dibromochloromethane	19.9100	0.50	20.0000		99.6	74 - 125			
Dibromomethane	18.0400	0.50	20.0000		90.2	74 - 116			
Dichlorodifluoromethane	17.5200	0.50	20.0000		87.6	40 - 186			
Ethylbenzene	34.9500	0.50	40.0000		87.4	77 - 130			
Hexachlorobutadiene	20.4700	0.50	20.0000		102	52 - 176			
Isopropylbenzene	19.9300	0.50	20.0000		99.6	77 - 144			
m,p-Xylene	37.1600	1.0	40.0000		92.9	84 - 136			
Methylene chloride	14.3400	1.0	20.0000		71.7	72 - 150			L4
n-Butylbenzene	18.7000	0.50	20.0000		93.5	73 - 154			
n-Propylbenzene	18.8500	0.50	20.0000		94.2	77 - 145			
Naphthalene	15.8000	0.50	20.0000		79.0	55 - 137			
o-Xylene	35.6600	0.50	40.0000		89.2	79 - 135			
sec-Butylbenzene	18.8200	0.50	20.0000		94.1	73 - 157			
Styrene	18.3700	0.50	20.0000		91.8	78 - 125			
tert-Butylbenzene	18.9300	0.50	20.0000		94.6	78 - 149			
Tetrachloroethene	17.4000	0.50	20.0000		87.0	74 - 136			
Toluene	34.1600	0.50	40.0000		85.4	78 - 124			
trans-1,2-Dichloroethene	17.0100	0.50	20.0000		85.0	66 - 131			
Trichloroethene	17.3700	0.50	20.0000		86.8	78 - 128			
Trichlorofluoromethane	20.0300	0.50	20.0000		100	60 - 170			
Vinyl chloride	16.5600	0.50	20.0000		82.8	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	28.25		25.0000		113	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.22		25.0000		101	61 - 123			
Surrogate: Dibromofluoromethane	24.76		25.0000		99.0	57 - 147			



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 : 07/28/2016

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

Batch B6G0319 - MSVOA_LL_W (continued)

LCS (B6G0319-BS1) - Continued

Prepared: 7/14/2016 Analyzed: 7/14/2016

Surrogate: Toluene-d8

25.73

25.0000

103

61 - 119

LCS Dup (B6G0319-BSD1)

Prepared: 7/14/2016 Analyzed: 7/14/2016

1,1,1,2-Tetrachloroethane	20.5400	0.50	20.0000	103	76 - 132	6.38	20
1,1,1-Trichloroethane	16.4900	0.50	20.0000	82.4	72 - 144	2.64	20
1,1,2,2-Tetrachloroethane	20.4500	0.50	20.0000	102	70 - 120	16.7	20
1,1,2-Trichloroethane	19.4500	0.50	20.0000	97.2	75 - 120	7.63	20
1,1-Dichloroethane	19.6700	0.50	20.0000	98.4	65 - 127	3.52	20
1,1-Dichloroethene	17.6800	0.50	20.0000	88.4	63 - 142	4.22	20
1,1-Dichloropropene	17.3800	0.50	20.0000	86.9	78 - 137	7.21	20
1,2,3-Trichloropropane	19.9900	0.50	20.0000	100	73 - 118	9.87	20
1,2,3-Trichlorobenzene	20.0000	0.50	20.0000	100	53 - 164	8.06	20
1,2,4-Trichlorobenzene	19.6400	0.50	20.0000	98.2	58 - 144	6.90	20
1,2,4-Trimethylbenzene	19.8600	0.50	20.0000	99.3	75 - 140	5.06	20
1,2-Dibromo-3-chloropropane	21.0600	0.50	20.0000	105	61 - 131	13.8	20
1,2-Dibromoethane	19.7300	0.50	20.0000	98.6	74 - 125	9.61	20
1,2-Dichlorobenzene	20.0700	0.50	20.0000	100	78 - 122	7.39	20
1,2-Dichloroethane	19.7900	0.50	20.0000	99.0	70 - 126	6.36	20
1,2-Dichloropropane	17.9300	0.50	20.0000	89.6	69 - 120	6.27	20
1,3,5-Trimethylbenzene	19.8800	0.50	20.0000	99.4	73 - 145	4.05	20
1,3-Dichlorobenzene	19.6900	0.50	20.0000	98.4	76 - 126	5.05	20
1,3-Dichloropropane	18.8500	0.50	20.0000	94.2	76 - 117	10.1	20
1,4-Dichlorobenzene	19.5600	0.50	20.0000	97.8	77 - 120	4.50	20
2,2-Dichloropropane	17.4600	0.50	20.0000	87.3	47 - 169	3.20	20
2-Chlorotoluene	19.8100	0.50	20.0000	99.0	75 - 135	5.60	20
4-Chlorotoluene	19.9400	0.50	20.0000	99.7	70 - 133	5.51	20
4-Isopropyltoluene	19.9800	0.50	20.0000	99.9	72 - 153	4.66	20
Benzene	33.5600	0.50	40.0000	83.9	73 - 123	5.64	20
Bromobenzene	19.8500	0.50	20.0000	99.2	75 - 121	5.91	20
Bromodichloromethane	19.5800	0.50	20.0000	97.9	73 - 124	6.38	20
Bromoform	22.2900	0.50	20.0000	111	70 - 135	9.69	20
Bromomethane	14.7000	0.50	20.0000	73.5	10 - 166	0.546	20
Carbon tetrachloride	19.7800	0.50	20.0000	98.9	65 - 171	6.36	20
Chlorobenzene	19.3800	0.50	20.0000	96.9	80 - 121	5.57	20
Chloroethane	16.4100	0.50	20.0000	82.0	55 - 143	5.38	20
Chloroform	20.1700	0.50	20.0000	101	65 - 130	4.15	20
Chloromethane	16.3400	0.50	20.0000	81.7	21 - 141	4.31	20
cis-1,2-Dichloroethene	19.1300	0.50	20.0000	95.6	64 - 126	6.75	20
cis-1,3-Dichloropropene	19.3400	0.50	20.0000	96.7	70 - 131	5.25	20
Dibromochloromethane	21.9700	0.50	20.0000	110	74 - 125	9.84	20
Dibromomethane	19.8900	0.50	20.0000	99.4	74 - 116	9.75	20
Dichlorodifluoromethane	18.1800	0.50	20.0000	90.9	40 - 186	3.70	20



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 07/28/2016

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

Batch B6G0319 - MSVOA_LL_W (continued)

LCS Dup (B6G0319-BSD1) - Continued

Prepared: 7/14/2016 Analyzed: 7/14/2016

Ethylbenzene	36.8800	0.50	40.0000		92.2	77 - 130	5.37	20	
Hexachlorobutadiene	21.3200	0.50	20.0000		107	52 - 176	4.07	20	
Isopropylbenzene	21.2100	0.50	20.0000		106	77 - 144	6.22	20	
m,p-Xylene	38.9100	1.0	40.0000		97.3	84 - 136	4.60	20	
Methylene chloride	15.2400	1.0	20.0000		76.2	72 - 150	6.09	20	
n-Butylbenzene	19.7300	0.50	20.0000		98.6	73 - 154	5.36	20	
n-Propylbenzene	19.7600	0.50	20.0000		98.8	77 - 145	4.71	20	
Naphthalene	18.4700	0.50	20.0000		92.4	55 - 137	15.6	20	
o-Xylene	38.0200	0.50	40.0000		95.0	79 - 135	6.41	20	
sec-Butylbenzene	19.9300	0.50	20.0000		99.6	73 - 157	5.73	20	
Styrene	19.7700	0.50	20.0000		98.8	78 - 125	7.34	20	
tert-Butylbenzene	20.0600	0.50	20.0000		100	78 - 149	5.80	20	
Tetrachloroethene	18.1900	0.50	20.0000		91.0	74 - 136	4.44	20	
Toluene	36.1300	0.50	40.0000		90.3	78 - 124	5.61	20	
trans-1,2-Dichloroethene	17.7700	0.50	20.0000		88.8	66 - 131	4.37	20	
Trichloroethene	18.4900	0.50	20.0000		92.4	78 - 128	6.25	20	
Trichlorofluoromethane	20.9400	0.50	20.0000		105	60 - 170	4.44	20	
Vinyl chloride	17.7800	0.50	20.0000		88.9	55 - 148	7.11	20	
Surrogate: 1,2-Dichloroethane-d4	28.07		25.0000		112	51 - 157			
Surrogate: 4-Bromofluorobenzene	24.75		25.0000		99.0	61 - 123			
Surrogate: Dibromofluoromethane	24.34		25.0000		97.4	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 Monthly Sample, 5

Report To : Steve Netto

Reported : 07/28/2016

Volatile Organic Compounds by EPA 8260B - Quality Control

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

Batch B6G0332 - MSVOA_LL_W

Blank (B6G0332-BLK1)

Prepared: 7/15/2016 Analyzed: 7/15/2016

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 : 07/28/2016

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

Batch B6G0332 - MSVOA_LL_W (continued)

Blank (B6G0332-BLK1) - Continued

Prepared: 7/15/2016 Analyzed: 7/15/2016

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				

Surrogate: 1,2-Dichloroethane-d4	27.52		25.0000		110	51 - 157			
Surrogate: 4-Bromofluorobenzene	23.92		25.0000		95.7	61 - 123			
Surrogate: Dibromofluoromethane	23.92		25.0000		95.7	57 - 147			
Surrogate: Toluene-d8	24.36		25.0000		97.4	61 - 119			

LCS (B6G0332-BS1)

Prepared: 7/15/2016 Analyzed: 7/15/2016

1,1,1,2-Tetrachloroethane	20.1600	0.50	20.0000		101	76 - 132			
1,1,1-Trichloroethane	17.1600	0.50	20.0000		85.8	72 - 144			
1,1,2,2-Tetrachloroethane	18.0800	0.50	20.0000		90.4	70 - 120			
1,1,2-Trichloroethane	17.7400	0.50	20.0000		88.7	75 - 120			
1,1-Dichloroethane	19.6700	0.50	20.0000		98.4	65 - 127			
1,1-Dichloroethene	17.7400	0.50	20.0000		88.7	63 - 142			
1,1-Dichloropropene	17.1500	0.50	20.0000		85.8	78 - 137			
1,2,3-Trichloropropane	18.2000	0.50	20.0000		91.0	73 - 118			
1,2,3-Trichlorobenzene	19.0000	0.50	20.0000		95.0	53 - 164			
1,2,4-Trichlorobenzene	18.8700	0.50	20.0000		94.4	58 - 144			
1,2,4-Trimethylbenzene	19.3900	0.50	20.0000		97.0	75 - 140			
1,2-Dibromo-3-chloropropane	18.9900	0.50	20.0000		95.0	61 - 131			
1,2-Dibromoethane	17.9300	0.50	20.0000		89.6	74 - 125			
1,2-Dichlorobenzene	19.5000	0.50	20.0000		97.5	78 - 122			
1,2-Dichloroethane	19.3500	0.50	20.0000		96.8	70 - 126			
1,2-Dichloropropane	17.1400	0.50	20.0000		85.7	69 - 120			
1,3,5-Trimethylbenzene	19.5700	0.50	20.0000		97.8	73 - 145			
1,3-Dichlorobenzene	19.3000	0.50	20.0000		96.5	76 - 126			
1,3-Dichloropropane	17.5500	0.50	20.0000		87.8	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 Limit	Notes

Batch B6G0332 - MSVOA_LL_W (continued)

LCS (B6G0332-BS1) - Continued

Prepared: 7/15/2016 Analyzed: 7/15/2016

1,4-Dichlorobenzene	19.2800	0.50	20.0000		96.4	77 - 120			
2,2-Dichloropropane	17.4500	0.50	20.0000		87.2	47 - 169			
2-Chlorotoluene	19.2400	0.50	20.0000		96.2	75 - 135			
4-Chlorotoluene	19.3800	0.50	20.0000		96.9	70 - 133			
4-Isopropyltoluene	19.7600	0.50	20.0000		98.8	72 - 153			
Benzene	32.4100	0.50	40.0000		81.0	73 - 123			
Bromobenzene	19.1800	0.50	20.0000		95.9	75 - 121			
Bromodichloromethane	18.8300	0.50	20.0000		94.2	73 - 124			
Bromoform	21.3800	0.50	20.0000		107	70 - 135			
Bromomethane	11.6600	0.50	20.0000		58.3	10 - 166			
Carbon tetrachloride	20.3800	0.50	20.0000		102	65 - 171			
Chlorobenzene	18.8500	0.50	20.0000		94.2	80 - 121			
Chloroethane	17.2700	0.50	20.0000		86.4	55 - 143			
Chloroform	19.7000	0.50	20.0000		98.5	65 - 130			
Chloromethane	24.1500	0.50	20.0000		121	21 - 141			
cis-1,2-Dichloroethene	18.3700	0.50	20.0000		91.8	64 - 126			
cis-1,3-Dichloropropene	18.7900	0.50	20.0000		94.0	70 - 131			
Dibromochloromethane	20.7800	0.50	20.0000		104	74 - 125			
Dibromomethane	18.1800	0.50	20.0000		90.9	74 - 116			
Dichlorodifluoromethane	18.6100	0.50	20.0000		93.0	40 - 186			
Ethylbenzene	36.3100	0.50	40.0000		90.8	77 - 130			
Hexachlorobutadiene	21.7400	0.50	20.0000		109	52 - 176			
Isopropylbenzene	20.7200	0.50	20.0000		104	77 - 144			
m,p-Xylene	38.3900	1.0	40.0000		96.0	84 - 136			
Methylene chloride	14.7300	1.0	20.0000		73.6	72 - 150			
n-Butylbenzene	19.3500	0.50	20.0000		96.8	73 - 154			
n-Propylbenzene	19.5900	0.50	20.0000		98.0	77 - 145			
Naphthalene	15.9200	0.50	20.0000		79.6	55 - 137			
o-Xylene	37.0100	0.50	40.0000		92.5	79 - 135			
sec-Butylbenzene	19.8700	0.50	20.0000		99.4	73 - 157			
Styrene	18.9900	0.50	20.0000		95.0	78 - 125			
tert-Butylbenzene	19.7600	0.50	20.0000		98.8	78 - 149			
Tetrachloroethene	18.0000	0.50	20.0000		90.0	74 - 136			
Toluene	35.4600	0.50	40.0000		88.6	78 - 124			
trans-1,2-Dichloroethene	17.1000	0.50	20.0000		85.5	66 - 131			
Trichloroethene	17.8500	0.50	20.0000		89.2	78 - 128			
Trichlorofluoromethane	22.3200	0.50	20.0000		112	60 - 170			
Vinyl chloride	17.4600	0.50	20.0000		87.3	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	28.45		25.0000		114	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.49		25.0000		102	61 - 123			
Surrogate: Dibromofluoromethane	25.26		25.0000		101	57 - 147			



Certificate of Analysis

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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 07/28/2016

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

Batch B6G0332 - MSVOA_LL_W (continued)

LCS (B6G0332-BS1) - Continued

Prepared: 7/15/2016 Analyzed: 7/15/2016

Surrogate: Toluene-d8

25.80

25.0000

103

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LCS Dup (B6G0332-BS1)

Prepared: 7/15/2016 Analyzed: 7/15/2016

1,1,1,2-Tetrachloroethane	20.6800	0.50	20.0000	103	76 - 132	2.55	20
1,1,1-Trichloroethane	17.2400	0.50	20.0000	86.2	72 - 144	0.465	20
1,1,2,2-Tetrachloroethane	19.6100	0.50	20.0000	98.0	70 - 120	8.12	20
1,1,2-Trichloroethane	19.8300	0.50	20.0000	99.2	75 - 120	11.1	20
1,1-Dichloroethane	20.1300	0.50	20.0000	101	65 - 127	2.31	20
1,1-Dichloroethene	18.0400	0.50	20.0000	90.2	63 - 142	1.68	20
1,1-Dichloropropene	16.9000	0.50	20.0000	84.5	78 - 137	1.47	20
1,2,3-Trichloropropane	20.7100	0.50	20.0000	104	73 - 118	12.9	20
1,2,3-Trichlorobenzene	19.9000	0.50	20.0000	99.5	53 - 164	4.63	20
1,2,4-Trichlorobenzene	19.3000	0.50	20.0000	96.5	58 - 144	2.25	20
1,2,4-Trimethylbenzene	19.6600	0.50	20.0000	98.3	75 - 140	1.38	20
1,2-Dibromo-3-chloropropane	21.8800	0.50	20.0000	109	61 - 131	14.1	20
1,2-Dibromoethane	19.7600	0.50	20.0000	98.8	74 - 125	9.71	20
1,2-Dichlorobenzene	19.8700	0.50	20.0000	99.4	78 - 122	1.88	20
1,2-Dichloroethane	20.5400	0.50	20.0000	103	70 - 126	5.97	20
1,2-Dichloropropane	18.1100	0.50	20.0000	90.6	69 - 120	5.50	20
1,3,5-Trimethylbenzene	19.6000	0.50	20.0000	98.0	73 - 145	0.153	20
1,3-Dichlorobenzene	19.4700	0.50	20.0000	97.4	76 - 126	0.877	20
1,3-Dichloropropane	18.8100	0.50	20.0000	94.0	76 - 117	6.93	20
1,4-Dichlorobenzene	19.4900	0.50	20.0000	97.4	77 - 120	1.08	20
2,2-Dichloropropane	17.7200	0.50	20.0000	88.6	47 - 169	1.54	20
2-Chlorotoluene	19.4900	0.50	20.0000	97.4	75 - 135	1.29	20
4-Chlorotoluene	19.6600	0.50	20.0000	98.3	70 - 133	1.43	20
4-Isopropyltoluene	19.8200	0.50	20.0000	99.1	72 - 153	0.303	20
Benzene	33.6800	0.50	40.0000	84.2	73 - 123	3.84	20
Bromobenzene	19.6300	0.50	20.0000	98.2	75 - 121	2.32	20
Bromodichloromethane	19.8200	0.50	20.0000	99.1	73 - 124	5.12	20
Bromoform	22.5500	0.50	20.0000	113	70 - 135	5.33	20
Bromomethane	12.7200	0.50	20.0000	63.6	10 - 166	8.70	20
Carbon tetrachloride	20.2300	0.50	20.0000	101	65 - 171	0.739	20
Chlorobenzene	19.2500	0.50	20.0000	96.2	80 - 121	2.10	20
Chloroethane	17.8900	0.50	20.0000	89.4	55 - 143	3.53	20
Chloroform	20.3900	0.50	20.0000	102	65 - 130	3.44	20
Chloromethane	24.6300	0.50	20.0000	123	21 - 141	1.97	20
cis-1,2-Dichloroethene	19.1700	0.50	20.0000	95.8	64 - 126	4.26	20
cis-1,3-Dichloropropene	19.6500	0.50	20.0000	98.2	70 - 131	4.47	20
Dibromochloromethane	21.7300	0.50	20.0000	109	74 - 125	4.47	20
Dibromomethane	19.6400	0.50	20.0000	98.2	74 - 116	7.72	20
Dichlorodifluoromethane	19.3800	0.50	20.0000	96.9	40 - 186	4.05	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 : 07/28/2016

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

Batch B6G0332 - MSVOA_LL_W (continued)

LCS Dup (B6G0332-BSD1) - Continued

Prepared: 7/15/2016 Analyzed: 7/15/2016

Ethylbenzene	36.9100	0.50	40.0000		92.3	77 - 130	1.64	20	
Hexachlorobutadiene	21.5000	0.50	20.0000		108	52 - 176	1.11	20	
Isopropylbenzene	20.7100	0.50	20.0000		104	77 - 144	0.0483	20	
m,p-Xylene	39.0700	1.0	40.0000		97.7	84 - 136	1.76	20	
Methylene chloride	15.7700	1.0	20.0000		78.8	72 - 150	6.82	20	
n-Butylbenzene	19.3700	0.50	20.0000		96.8	73 - 154	0.103	20	
n-Propylbenzene	19.5500	0.50	20.0000		97.8	77 - 145	0.204	20	
Naphthalene	17.7300	0.50	20.0000		88.6	55 - 137	10.8	20	
o-Xylene	38.1300	0.50	40.0000		95.3	79 - 135	2.98	20	
sec-Butylbenzene	19.8600	0.50	20.0000		99.3	73 - 157	0.0503	20	
Styrene	19.6100	0.50	20.0000		98.0	78 - 125	3.21	20	
tert-Butylbenzene	19.7400	0.50	20.0000		98.7	78 - 149	0.101	20	
Tetrachloroethene	18.1400	0.50	20.0000		90.7	74 - 136	0.775	20	
Toluene	36.7600	0.50	40.0000		91.9	78 - 124	3.60	20	
trans-1,2-Dichloroethene	17.5400	0.50	20.0000		87.7	66 - 131	2.54	20	
Trichloroethene	18.8600	0.50	20.0000		94.3	78 - 128	5.50	20	
Trichlorofluoromethane	22.6800	0.50	20.0000		113	60 - 170	1.60	20	
Vinyl chloride	18.0500	0.50	20.0000		90.2	55 - 148	3.32	20	
Surrogate: 1,2-Dichloroethane-d4	28.03		25.0000		112	51 - 157			
Surrogate: 4-Bromofluorobenzene	24.48		25.0000		97.9	61 - 123			
Surrogate: Dibromofluoromethane	24.78		25.0000		99.1	57 - 147			
Surrogate: Toluene-d8	25.24		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 Monthly Sample, 5

Report To : Steve Netto

Reported : 07/28/2016

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

Batch B6G0161 - MSSEMI_W

Blank (B6G0161-BLK1)

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

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	54.36		100.000		54.4	42 - 106			
Surrogate: 2-Fluorobiphenyl	65.58		100.000		65.6	55 - 117			
Surrogate: 4-Terphenyl-d14	87.90		100.000		87.9	52 - 142			
Surrogate: Nitrobenzene-d5	68.76		100.000		68.8	43 - 116			

LCS (B6G0161-BS1)

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

1,4-Dioxane	107.380	2.0	100.000		107	62 - 127			
Surrogate: 1,2-Dichlorobenzene-d4	58.63		100.000		58.6	42 - 106			
Surrogate: 2-Fluorobiphenyl	69.82		100.000		69.8	55 - 117			
Surrogate: 4-Terphenyl-d14	84.98		100.000		85.0	52 - 142			
Surrogate: Nitrobenzene-d5	79.14		100.000		79.1	43 - 116			

LCS Dup (B6G0161-BSD1)

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

1,4-Dioxane	108.140	2.0	100.000		108	62 - 127	0.705	20	
Surrogate: 1,2-Dichlorobenzene-d4	60.87		100.000		60.9	42 - 106			
Surrogate: 2-Fluorobiphenyl	70.88		100.000		70.9	55 - 117			
Surrogate: 4-Terphenyl-d14	85.37		100.000		85.4	52 - 142			
Surrogate: Nitrobenzene-d5	81.11		100.000		81.1	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 : 07/28/2016

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 Limit	Notes

Batch B6G0184 - MSSEMI_ISOTOPEDILN_W

Blank (B6G0184-BLK1)

Prepared: 7/11/2016 Analyzed: 7/11/2016

1,4-Dioxane	ND	0.20		NR					
Surrogate: 1,2-Dichlorobenzene-d4	0.7139		1.00000	71.4	31 - 106				
Surrogate: 2-Fluorobiphenyl	0.6978		1.00000	69.8	28 - 122				
Surrogate: 4-Terphenyl-d14	0.9364		1.00000	93.6	43 - 131				
Surrogate: Nitrobenzene-d5	0.5449		1.00000	54.5	20 - 119				

LCS (B6G0184-BS1)

Prepared: 7/11/2016 Analyzed: 7/11/2016

1,4-Dioxane	1.08446	0.20	1.00000	108	49 - 169				
Surrogate: 1,2-Dichlorobenzene-d4	0.7039		1.00000	70.4	31 - 106				
Surrogate: 2-Fluorobiphenyl	0.7086		1.00000	70.9	28 - 122				
Surrogate: 4-Terphenyl-d14	0.7797		1.00000	78.0	43 - 131				
Surrogate: Nitrobenzene-d5	0.5246		1.00000	52.5	20 - 119				

LCS Dup (B6G0184-BSD1)

Prepared: 7/11/2016 Analyzed: 7/11/2016

1,4-Dioxane	1.21530	0.20	1.00000	122	49 - 169	11.4	20		
Surrogate: 1,2-Dichlorobenzene-d4	0.7194		1.00000	71.9	31 - 106				
Surrogate: 2-Fluorobiphenyl	0.7592		1.00000	75.9	28 - 122				
Surrogate: 4-Terphenyl-d14	0.8302		1.00000	83.0	43 - 131				
Surrogate: Nitrobenzene-d5	0.5315		1.00000	53.2	20 - 119				



Certificate of Analysis

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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 07/28/2016

Notes and Definitions

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.

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#: 1602373-04 / POX	ND
Method Blank	ND
Detection Limit	0.5
Date Analyzed:	07-21-16

Quality Control Summary

Sample ID: ATL Lab#: 1602373-04 / POX

<u>Analyte</u>	<u>Sample Result</u>	<u>Spike Conc</u>	<u>Spike Result</u>	<u>Spike % Rec</u>	<u>Spike Duplicate Result</u>	<u>Spike Duplicate % Rec</u>	<u>RPD</u>
Bromate	ND	20.0	18.7	94	19.3	97	3
QC Guidelines				75-125		75-125	NMT 10

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 1602373

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#: SC10521- STANDARD TAT

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

Analysis	Due	Expires	Sampled	Comments

ATL Lab#: 1602373-04 / POX

317.0 SUB

[Bromate]

1-Poly Unpres - 125mL

07/21/16 17:00

Groundwater

07/08/16 08:05

07/07/16 08:05

Released By

Date

Received By

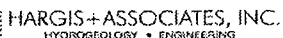
Date

Released By

Date

Received By

Date



PROJECT: Raytheon Main GETS Monthly Sample

Project Manager Steve Netto

QA Manager Kevin Fong

Phone 858.455.6500

Fax 858.455.6533

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.

1.4 Temperature on receipt



July 28, 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 : 1602567

Client Reference : Raytheon Main GETS Mid Month Sample, 532.15

Enclosed are the results for sample(s) received on July 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,

A handwritten signature in black ink, appearing to read "E Rodriguez", is written over a light blue horizontal line.

Eddie Rodriguez
Laboratory Director

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



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-072116	1602567-01	Lab prepared water	7/21/16 7:00	7/21/16 10:10
CEFF	1602567-02	Groundwater	7/21/16 7:57	7/21/16 10:10
CBT	1602567-03	Groundwater	7/21/16 8:02	7/21/16 10:10
POX	1602567-04	Groundwater	7/21/16 8:10	7/21/16 10:10
INF	1602567-05	Groundwater	7/21/16 8:20	7/21/16 10:10
EW-02	1602567-06	Groundwater	7/21/16 8:40	7/21/16 10:10
MW-29	1602567-07	Groundwater	7/21/16 8:55	7/21/16 10:10



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID TB-072116

Lab ID: 1602567-01

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	B6G0710	07/27/2016	07/27/16 14:06	
1,1,1-Trichloroethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,1,2-Trichloroethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,1-Dichloroethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,1-Dichloroethene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,1-Dichloropropene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,2,3-Trichloropropane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,2,3-Trichlorobenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,2,4-Trichlorobenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,2,4-Trimethylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,2-Dibromoethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,2-Dichlorobenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,2-Dichloroethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,2-Dichloropropane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,3,5-Trimethylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,3-Dichlorobenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,3-Dichloropropane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
1,4-Dichlorobenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
2,2-Dichloropropane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
2-Chlorotoluene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
4-Chlorotoluene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
4-Isopropyltoluene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Benzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Bromobenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Bromodichloromethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Bromoform	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Bromomethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Carbon tetrachloride	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Chlorobenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Chloroethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Chloroform	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Chloromethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
cis-1,2-Dichloroethene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
cis-1,3-Dichloropropene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Dibromochloromethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID TB-072116

Lab ID: 1602567-01

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	B6G0710	07/27/2016	07/27/16 14:06	
Dichlorodifluoromethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Ethylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Hexachlorobutadiene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Isopropylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
m,p-Xylene	ND	1.0	1	B6G0710	07/27/2016	07/27/16 14:06	
Methylene chloride	3.6	1.0	1	B6G0710	07/27/2016	07/27/16 14:06	
n-Butylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
n-Propylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Naphthalene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
o-Xylene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
sec-Butylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Styrene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
tert-Butylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Tetrachloroethene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Toluene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
trans-1,2-Dichloroethene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Trichloroethene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Trichlorofluoromethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
Vinyl chloride	ND	0.50	1	B6G0710	07/27/2016	07/27/16 14:06	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>137 %</i>	<i>51 - 157</i>		B6G0710	07/27/2016	07/27/16 14:06	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.2 %</i>	<i>61 - 123</i>		B6G0710	07/27/2016	07/27/16 14:06	
<i>Surrogate: Dibromofluoromethane</i>	<i>124 %</i>	<i>57 - 147</i>		B6G0710	07/27/2016	07/27/16 14:06	
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>	<i>61 - 119</i>		B6G0710	07/27/2016	07/27/16 14:06	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID CEFF

Lab ID: 1602567-02

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,1,1-Trichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,1,2-Trichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,1-Dichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,1-Dichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,1-Dichloropropene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,2,3-Trichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,2,3-Trichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,2,4-Trichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,2,4-Trimethylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,2-Dibromoethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,2-Dichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,2-Dichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,2-Dichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,3,5-Trimethylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,3-Dichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,3-Dichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
1,4-Dichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
2,2-Dichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
2-Chlorotoluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
4-Chlorotoluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
4-Isopropyltoluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Benzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Bromobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Bromodichloromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Bromoform	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Bromomethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Carbon tetrachloride	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Chlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Chloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Chloroform	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Chloromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
cis-1,2-Dichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
cis-1,3-Dichloropropene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Dibromochloromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID CEFF

Lab ID: 1602567-02

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Dichlorodifluoromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Ethylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Hexachlorobutadiene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Isopropylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
m,p-Xylene	ND	1.0	1	B6G0671	07/26/2016	07/26/16 14:35	
Methylene chloride	ND	1.0	1	B6G0671	07/26/2016	07/26/16 14:35	
n-Butylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
n-Propylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Naphthalene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
o-Xylene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
sec-Butylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Styrene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
tert-Butylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Tetrachloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Toluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
trans-1,2-Dichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Trichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Trichlorofluoromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Vinyl chloride	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:35	
Surrogate: 1,2-Dichloroethane-d4	142 %	51 - 157		B6G0671	07/26/2016	07/26/16 14:35	
Surrogate: 4-Bromofluorobenzene	97.6 %	61 - 123		B6G0671	07/26/2016	07/26/16 14:35	
Surrogate: Dibromofluoromethane	134 %	57 - 147		B6G0671	07/26/2016	07/26/16 14:35	
Surrogate: Toluene-d8	102 %	61 - 119		B6G0671	07/26/2016	07/26/16 14:35	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID CEFF

Lab ID: 1602567-02

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	B6G0682	07/26/2016	07/28/16 03:56	
Surrogate: 1,2-Dichlorobenzene-d4	65.6 %	31 - 106		B6G0682	07/26/2016	07/28/16 03:56	
Surrogate: 2-Fluorobiphenyl	58.3 %	28 - 122		B6G0682	07/26/2016	07/28/16 03:56	
Surrogate: 4-Terphenyl-d14	61.9 %	43 - 131		B6G0682	07/26/2016	07/28/16 03:56	
Surrogate: Nitrobenzene-d5	53.3 %	20 - 119		B6G0682	07/26/2016	07/28/16 03:56	



Certificate of Analysis

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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID CBT

Lab ID: 1602567-03

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,1,1-Trichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,1,2-Trichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,1-Dichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,1-Dichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,1-Dichloropropene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,2,3-Trichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,2,3-Trichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,2,4-Trichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,2,4-Trimethylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,2-Dibromoethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,2-Dichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,2-Dichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,2-Dichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,3,5-Trimethylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,3-Dichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,3-Dichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
1,4-Dichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
2,2-Dichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
2-Chlorotoluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
4-Chlorotoluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
4-Isopropyltoluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Benzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Bromobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Bromodichloromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Bromoform	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Bromomethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Carbon tetrachloride	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Chlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Chloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Chloroform	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Chloromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
cis-1,2-Dichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
cis-1,3-Dichloropropene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Dibromochloromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID CBT

Lab ID: 1602567-03

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Dichlorodifluoromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Ethylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Hexachlorobutadiene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Isopropylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
m,p-Xylene	ND	1.0	1	B6G0671	07/26/2016	07/26/16 14:59	
Methylene chloride	ND	1.0	1	B6G0671	07/26/2016	07/26/16 14:59	
n-Butylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
n-Propylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Naphthalene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
o-Xylene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
sec-Butylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Styrene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
tert-Butylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Tetrachloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Toluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
trans-1,2-Dichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Trichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Trichlorofluoromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Vinyl chloride	ND	0.50	1	B6G0671	07/26/2016	07/26/16 14:59	
Surrogate: 1,2-Dichloroethane-d4	139 %	51 - 157		B6G0671	07/26/2016	07/26/16 14:59	
Surrogate: 4-Bromofluorobenzene	97.1 %	61 - 123		B6G0671	07/26/2016	07/26/16 14:59	
Surrogate: Dibromofluoromethane	129 %	57 - 147		B6G0671	07/26/2016	07/26/16 14:59	
Surrogate: Toluene-d8	98.3 %	61 - 119		B6G0671	07/26/2016	07/26/16 14:59	



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID CBT

Lab ID: 1602567-03

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	B6G0682	07/26/2016	07/28/16 04:24	
Surrogate: 1,2-Dichlorobenzene-d4	61.4 %	31 - 106		B6G0682	07/26/2016	07/28/16 04:24	
Surrogate: 2-Fluorobiphenyl	55.6 %	28 - 122		B6G0682	07/26/2016	07/28/16 04:24	
Surrogate: 4-Terphenyl-d14	66.4 %	43 - 131		B6G0682	07/26/2016	07/28/16 04:24	
Surrogate: Nitrobenzene-d5	48.1 %	20 - 119		B6G0682	07/26/2016	07/28/16 04:24	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID POX

Lab ID: 1602567-04

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,1,1-Trichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,1,2-Trichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,1-Dichloroethane	0.71	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,1-Dichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,1-Dichloropropene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,2,3-Trichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,2,3-Trichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,2,4-Trichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,2,4-Trimethylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,2-Dibromoethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,2-Dichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,2-Dichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,2-Dichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,3,5-Trimethylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,3-Dichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,3-Dichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
1,4-Dichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
2,2-Dichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
2-Chlorotoluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
4-Chlorotoluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
4-Isopropyltoluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Benzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Bromobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Bromodichloromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Bromoform	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Bromomethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Carbon tetrachloride	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Chlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Chloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Chloroform	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Chloromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
cis-1,2-Dichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
cis-1,3-Dichloropropene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Dibromochloromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID POX

Lab ID: 1602567-04

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Dichlorodifluoromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Ethylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Hexachlorobutadiene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Isopropylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
m,p-Xylene	ND	1.0	1	B6G0671	07/26/2016	07/26/16 15:23	
Methylene chloride	ND	1.0	1	B6G0671	07/26/2016	07/26/16 15:23	
n-Butylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
n-Propylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Naphthalene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
o-Xylene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
sec-Butylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Styrene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
tert-Butylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Tetrachloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Toluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
trans-1,2-Dichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Trichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Trichlorofluoromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Vinyl chloride	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:23	
Surrogate: 1,2-Dichloroethane-d4	142 %	51 - 157		B6G0671	07/26/2016	07/26/16 15:23	
Surrogate: 4-Bromofluorobenzene	97.4 %	61 - 123		B6G0671	07/26/2016	07/26/16 15:23	
Surrogate: Dibromofluoromethane	121 %	57 - 147		B6G0671	07/26/2016	07/26/16 15:23	
Surrogate: Toluene-d8	101 %	61 - 119		B6G0671	07/26/2016	07/26/16 15:23	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID POX

Lab ID: 1602567-04

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	B6G0682	07/26/2016	07/28/16 04:51	
Surrogate: 1,2-Dichlorobenzene-d4	68.4 %	31 - 106		B6G0682	07/26/2016	07/28/16 04:51	
Surrogate: 2-Fluorobiphenyl	58.6 %	28 - 122		B6G0682	07/26/2016	07/28/16 04:51	
Surrogate: 4-Terphenyl-d14	65.0 %	43 - 131		B6G0682	07/26/2016	07/28/16 04:51	
Surrogate: Nitrobenzene-d5	53.8 %	20 - 119		B6G0682	07/26/2016	07/28/16 04:51	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID INF

Lab ID: 1602567-05

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	B6G0710	07/27/2016	07/27/16 19:45	
1,1,1-Trichloroethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,1,2-Trichloroethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,1-Dichloroethane	1.1	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,1-Dichloroethene	84	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,1-Dichloropropene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,2,3-Trichloropropane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,2,3-Trichlorobenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,2,4-Trichlorobenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,2,4-Trimethylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,2-Dibromoethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,2-Dichlorobenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,2-Dichloroethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,2-Dichloropropane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,3,5-Trimethylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,3-Dichlorobenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,3-Dichloropropane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
1,4-Dichlorobenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
2,2-Dichloropropane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
2-Chlorotoluene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
4-Chlorotoluene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
4-Isopropyltoluene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Benzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Bromobenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Bromodichloromethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Bromoform	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Bromomethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Carbon tetrachloride	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Chlorobenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Chloroethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Chloroform	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Chloromethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
cis-1,2-Dichloroethene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
cis-1,3-Dichloropropene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Dibromochloromethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID INF

Lab ID: 1602567-05

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	B6G0710	07/27/2016	07/27/16 19:45	
Dichlorodifluoromethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Ethylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Hexachlorobutadiene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Isopropylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
m,p-Xylene	ND	1.0	1	B6G0710	07/27/2016	07/27/16 19:45	
Methylene chloride	ND	1.0	1	B6G0710	07/27/2016	07/27/16 19:45	
n-Butylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
n-Propylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Naphthalene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
o-Xylene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
sec-Butylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Styrene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
tert-Butylbenzene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Tetrachloroethene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Toluene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
trans-1,2-Dichloroethene	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Trichloroethene	0.69	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Trichlorofluoromethane	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
Vinyl chloride	ND	0.50	1	B6G0710	07/27/2016	07/27/16 19:45	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>143 %</i>	<i>51 - 157</i>		B6G0710	07/27/2016	07/27/16 19:45	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.6 %</i>	<i>61 - 123</i>		B6G0710	07/27/2016	07/27/16 19:45	
<i>Surrogate: Dibromofluoromethane</i>	<i>123 %</i>	<i>57 - 147</i>		B6G0710	07/27/2016	07/27/16 19:45	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>61 - 119</i>		B6G0710	07/27/2016	07/27/16 19:45	



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9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID INF

Lab ID: 1602567-05

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	21	2.0	1	B6G0695	07/26/2016	07/26/16 17:34	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	38.3 %	42 - 106		B6G0695	07/26/2016	07/26/16 17:34	S3
<i>Surrogate: 2-Fluorobiphenyl</i>	48.5 %	55 - 117		B6G0695	07/26/2016	07/26/16 17:34	S3
<i>Surrogate: 4-Terphenyl-d14</i>	74.2 %	52 - 142		B6G0695	07/26/2016	07/26/16 17:34	
<i>Surrogate: Nitrobenzene-d5</i>	58.9 %	43 - 116		B6G0695	07/26/2016	07/26/16 17:34	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID EW-02

Lab ID: 1602567-06

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,1,1-Trichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,1,2-Trichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,1-Dichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,1-Dichloroethene	38	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,1-Dichloropropene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,2,3-Trichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,2,3-Trichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,2,4-Trichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,2,4-Trimethylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,2-Dibromoethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,2-Dichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,2-Dichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,2-Dichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,3,5-Trimethylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,3-Dichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,3-Dichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
1,4-Dichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
2,2-Dichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
2-Chlorotoluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
4-Chlorotoluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
4-Isopropyltoluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Benzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Bromobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Bromodichloromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Bromoform	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Bromomethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Carbon tetrachloride	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Chlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Chloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Chloroform	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Chloromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
cis-1,2-Dichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
cis-1,3-Dichloropropene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Dibromochloromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID EW-02

Lab ID: 1602567-06

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Dichlorodifluoromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Ethylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Hexachlorobutadiene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Isopropylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
m,p-Xylene	ND	1.0	1	B6G0671	07/26/2016	07/26/16 15:47	
Methylene chloride	ND	1.0	1	B6G0671	07/26/2016	07/26/16 15:47	
n-Butylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
n-Propylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Naphthalene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
o-Xylene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
sec-Butylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Styrene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
tert-Butylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Tetrachloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Toluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
trans-1,2-Dichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Trichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Trichlorofluoromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Vinyl chloride	ND	0.50	1	B6G0671	07/26/2016	07/26/16 15:47	
Surrogate: 1,2-Dichloroethane-d4	140 %	51 - 157		B6G0671	07/26/2016	07/26/16 15:47	
Surrogate: 4-Bromofluorobenzene	93.8 %	61 - 123		B6G0671	07/26/2016	07/26/16 15:47	
Surrogate: Dibromofluoromethane	122 %	57 - 147		B6G0671	07/26/2016	07/26/16 15:47	
Surrogate: Toluene-d8	99.5 %	61 - 119		B6G0671	07/26/2016	07/26/16 15:47	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID EW-02

Lab ID: 1602567-06

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	8.4	2.0	1	B6G0695	07/26/2016	07/26/16 18:02	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>54.0 %</i>	<i>42 - 106</i>		B6G0695	07/26/2016	<i>07/26/16 18:02</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>66.3 %</i>	<i>55 - 117</i>		B6G0695	07/26/2016	<i>07/26/16 18:02</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>90.3 %</i>	<i>52 - 142</i>		B6G0695	07/26/2016	<i>07/26/16 18:02</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>84.2 %</i>	<i>43 - 116</i>		B6G0695	07/26/2016	<i>07/26/16 18:02</i>	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID MW-29

Lab ID: 1602567-07

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,1,1-Trichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,1,2-Trichloroethane	1.1	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,1-Dichloroethane	4.1	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,1-Dichloroethene	410	2.5	5	B6G0671	07/26/2016	07/26/16 16:36	
1,1-Dichloropropene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,2,3-Trichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,2,3-Trichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,2,4-Trichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,2,4-Trimethylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,2-Dibromoethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,2-Dichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,2-Dichloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,2-Dichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,3,5-Trimethylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,3-Dichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,3-Dichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
1,4-Dichlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
2,2-Dichloropropane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
2-Chlorotoluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
4-Chlorotoluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
4-Isopropyltoluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Benzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Bromobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Bromodichloromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Bromoform	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Bromomethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Carbon tetrachloride	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Chlorobenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Chloroethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Chloroform	0.54	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Chloromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
cis-1,2-Dichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
cis-1,3-Dichloropropene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Dibromochloromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID MW-29

Lab ID: 1602567-07

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Dichlorodifluoromethane	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Ethylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Hexachlorobutadiene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Isopropylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
m,p-Xylene	ND	1.0	1	B6G0671	07/26/2016	07/26/16 16:12	
Methylene chloride	ND	1.0	1	B6G0671	07/26/2016	07/26/16 16:12	
n-Butylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
n-Propylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Naphthalene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
o-Xylene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
sec-Butylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Styrene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
tert-Butylbenzene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Tetrachloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Toluene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
trans-1,2-Dichloroethene	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Trichloroethene	2.8	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Trichlorofluoromethane	1.5	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
Vinyl chloride	ND	0.50	1	B6G0671	07/26/2016	07/26/16 16:12	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>123 %</i>	<i>51 - 157</i>		B6G0671	07/26/2016	<i>07/26/16 16:36</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>146 %</i>	<i>51 - 157</i>		B6G0671	07/26/2016	<i>07/26/16 16:12</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.0 %</i>	<i>61 - 123</i>		B6G0671	07/26/2016	<i>07/26/16 16:36</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.2 %</i>	<i>61 - 123</i>		B6G0671	07/26/2016	<i>07/26/16 16:12</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>135 %</i>	<i>57 - 147</i>		B6G0671	07/26/2016	<i>07/26/16 16:36</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>139 %</i>	<i>57 - 147</i>		B6G0671	07/26/2016	<i>07/26/16 16:12</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6G0671	07/26/2016	<i>07/26/16 16:12</i>	
<i>Surrogate: Toluene-d8</i>	<i>98.9 %</i>	<i>61 - 119</i>		B6G0671	07/26/2016	<i>07/26/16 16:36</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

Client Sample ID MW-29

Lab ID: 1602567-07

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	81	2.0	1	B6G0695	07/26/2016	07/26/16 18:30	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>54.2 %</i>	<i>42 - 106</i>		B6G0695	07/26/2016	<i>07/26/16 18:30</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>64.2 %</i>	<i>55 - 117</i>		B6G0695	07/26/2016	<i>07/26/16 18:30</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>83.9 %</i>	<i>52 - 142</i>		B6G0695	07/26/2016	<i>07/26/16 18:30</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>83.4 %</i>	<i>43 - 116</i>		B6G0695	07/26/2016	<i>07/26/16 18:30</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	% Rec Limits	RPD RPD	RPD Limit	Notes

Batch B6G0671 - MSVOA_LL_W

Blank (B6G0671-BLK1)

Prepared: 7/26/2016 Analyzed: 7/26/2016

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 Limit	Notes

Batch B6G0671 - MSVOA_LL_W (continued)

Blank (B6G0671-BLK1) - Continued

Prepared: 7/26/2016 Analyzed: 7/26/2016

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				
Surrogate: 1,2-Dichloroethane-d4	33.20		25.0000		133	51 - 157			
Surrogate: 4-Bromofluorobenzene	24.77		25.0000		99.1	61 - 123			
Surrogate: Dibromofluoromethane	31.45		25.0000		126	57 - 147			
Surrogate: Toluene-d8	25.29		25.0000		101	61 - 119			

LCS (B6G0671-BS1)

Prepared: 7/26/2016 Analyzed: 7/26/2016

1,1,1,2-Tetrachloroethane	18.2500	0.50	20.0000		91.2	76 - 132			
1,1,1-Trichloroethane	20.2100	0.50	20.0000		101	72 - 144			
1,1,2,2-Tetrachloroethane	14.3400	0.50	20.0000		71.7	70 - 120			
1,1,2-Trichloroethane	15.7900	0.50	20.0000		79.0	75 - 120			
1,1-Dichloroethane	21.4000	0.50	20.0000		107	65 - 127			
1,1-Dichloroethene	20.0700	0.50	20.0000		100	63 - 142			
1,1-Dichloropropene	18.1200	0.50	20.0000		90.6	78 - 137			
1,2,3-Trichloropropane	15.3000	0.50	20.0000		76.5	73 - 118			
1,2,3-Trichlorobenzene	13.9000	0.50	20.0000		69.5	53 - 164			
1,2,4-Trichlorobenzene	14.1500	0.50	20.0000		70.8	58 - 144			
1,2,4-Trimethylbenzene	16.2600	0.50	20.0000		81.3	75 - 140			
1,2-Dibromo-3-chloropropane	14.7700	0.50	20.0000		73.8	61 - 131			
1,2-Dibromoethane	16.0800	0.50	20.0000		80.4	74 - 125			
1,2-Dichlorobenzene	16.2900	0.50	20.0000		81.4	78 - 122			
1,2-Dichloroethane	19.3900	0.50	20.0000		97.0	70 - 126			
1,2-Dichloropropane	15.2800	0.50	20.0000		76.4	69 - 120			
1,3,5-Trimethylbenzene	16.9000	0.50	20.0000		84.5	73 - 145			



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Project Number : Raytheon Main GETS Mid Month Sample

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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

Batch B6G0671 - MSVOA_LL_W (continued)

LCS (B6G0671-BS1) - Continued

Prepared: 7/26/2016 Analyzed: 7/26/2016

1,3-Dichlorobenzene	16.7300	0.50	20.0000		83.6	76 - 126			
1,3-Dichloropropane	14.8800	0.50	20.0000		74.4	76 - 117			L4
1,4-Dichlorobenzene	16.2400	0.50	20.0000		81.2	77 - 120			
2,2-Dichloropropane	19.6000	0.50	20.0000		98.0	47 - 169			
2-Chlorotoluene	16.7400	0.50	20.0000		83.7	75 - 135			
4-Chlorotoluene	16.6800	0.50	20.0000		83.4	70 - 133			
4-Isopropyltoluene	16.0600	0.50	20.0000		80.3	72 - 153			
Benzene	31.6400	0.50	40.0000		79.1	73 - 123			
Bromobenzene	16.4400	0.50	20.0000		82.2	75 - 121			
Bromodichloromethane	18.3200	0.50	20.0000		91.6	73 - 124			
Bromoform	19.0100	0.50	20.0000		95.0	70 - 135			
Bromomethane	11.1400	0.50	20.0000		55.7	10 - 166			
Carbon tetrachloride	23.8100	0.50	20.0000		119	65 - 171			
Chlorobenzene	16.3200	0.50	20.0000		81.6	80 - 121			
Chloroethane	19.5800	0.50	20.0000		97.9	55 - 143			
Chloroform	21.0800	0.50	20.0000		105	65 - 130			
Chloromethane	20.2400	0.50	20.0000		101	21 - 141			
cis-1,2-Dichloroethene	19.6400	0.50	20.0000		98.2	64 - 126			
cis-1,3-Dichloropropene	16.5900	0.50	20.0000		83.0	70 - 131			
Dibromochloromethane	18.1600	0.50	20.0000		90.8	74 - 125			
Dibromomethane	16.4400	0.50	20.0000		82.2	74 - 116			
Dichlorodifluoromethane	14.0000	0.50	20.0000		70.0	40 - 186			
Ethylbenzene	32.2500	0.50	40.0000		80.6	77 - 130			
Hexachlorobutadiene	17.6600	0.50	20.0000		88.3	52 - 176			
Isopropylbenzene	17.8200	0.50	20.0000		89.1	77 - 144			
m,p-Xylene	34.3700	1.0	40.0000		85.9	84 - 136			
Methylene chloride	16.3800	1.0	20.0000		81.9	72 - 150			
n-Butylbenzene	15.2000	0.50	20.0000		76.0	73 - 154			
n-Propylbenzene	16.7700	0.50	20.0000		83.8	77 - 145			
Naphthalene	10.6200	0.50	20.0000		53.1	55 - 137			L4
o-Xylene	32.5400	0.50	40.0000		81.4	79 - 135			
sec-Butylbenzene	16.5600	0.50	20.0000		82.8	73 - 157			
Styrene	16.1600	0.50	20.0000		80.8	78 - 125			
tert-Butylbenzene	16.8100	0.50	20.0000		84.0	78 - 149			
Tetrachloroethene	17.3500	0.50	20.0000		86.8	74 - 136			
Toluene	32.8900	0.50	40.0000		82.2	78 - 124			
trans-1,2-Dichloroethene	19.6200	0.50	20.0000		98.1	66 - 131			
Trichloroethene	17.1600	0.50	20.0000		85.8	78 - 128			
Trichlorofluoromethane	25.5000	0.50	20.0000		128	60 - 170			
Vinyl chloride	17.1900	0.50	20.0000		86.0	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	31.00		25.0000		124	51 - 157			



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

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

Batch B6G0671 - MSVOA_LL_W (continued)

LCS (B6G0671-BS1) - Continued

Prepared: 7/26/2016 Analyzed: 7/26/2016

Surrogate: 4-Bromofluorobenzene	25.69		25.0000		103	61 - 123			
Surrogate: Dibromofluoromethane	30.68		25.0000		123	57 - 147			
Surrogate: Toluene-d8	26.27		25.0000		105	61 - 119			

LCS Dup (B6G0671-BSD1)

Prepared: 7/26/2016 Analyzed: 7/26/2016

1,1,1,2-Tetrachloroethane	19.2200	0.50	20.0000		96.1	76 - 132	5.18	20	
1,1,1-Trichloroethane	21.2500	0.50	20.0000		106	72 - 144	5.02	20	
1,1,2,2-Tetrachloroethane	14.6700	0.50	20.0000		73.4	70 - 120	2.28	20	
1,1,2-Trichloroethane	16.1500	0.50	20.0000		80.8	75 - 120	2.25	20	
1,1-Dichloroethane	22.1500	0.50	20.0000		111	65 - 127	3.44	20	
1,1-Dichloroethene	21.1900	0.50	20.0000		106	63 - 142	5.43	20	
1,1-Dichloropropene	18.1200	0.50	20.0000		90.6	78 - 137	0.00	20	
1,2,3-Trichloropropane	15.3000	0.50	20.0000		76.5	73 - 118	0.00	20	
1,2,3-Trichlorobenzene	14.4700	0.50	20.0000		72.4	53 - 164	4.02	20	
1,2,4-Trichlorobenzene	14.6000	0.50	20.0000		73.0	58 - 144	3.13	20	
1,2,4-Trimethylbenzene	16.8900	0.50	20.0000		84.4	75 - 140	3.80	20	
1,2-Dibromo-3-chloropropane	13.8500	0.50	20.0000		69.2	61 - 131	6.43	20	
1,2-Dibromoethane	16.6200	0.50	20.0000		83.1	74 - 125	3.30	20	
1,2-Dichlorobenzene	16.7300	0.50	20.0000		83.6	78 - 122	2.67	20	
1,2-Dichloroethane	19.9500	0.50	20.0000		99.8	70 - 126	2.85	20	
1,2-Dichloropropane	15.9200	0.50	20.0000		79.6	69 - 120	4.10	20	
1,3,5-Trimethylbenzene	17.4100	0.50	20.0000		87.0	73 - 145	2.97	20	
1,3-Dichlorobenzene	17.1800	0.50	20.0000		85.9	76 - 126	2.65	20	
1,3-Dichloropropane	15.4200	0.50	20.0000		77.1	76 - 117	3.56	20	
1,4-Dichlorobenzene	17.0400	0.50	20.0000		85.2	77 - 120	4.81	20	
2,2-Dichloropropane	19.8300	0.50	20.0000		99.2	47 - 169	1.17	20	
2-Chlorotoluene	17.5500	0.50	20.0000		87.8	75 - 135	4.72	20	
4-Chlorotoluene	17.2000	0.50	20.0000		86.0	70 - 133	3.07	20	
4-Isopropyltoluene	16.8100	0.50	20.0000		84.0	72 - 153	4.56	20	
Benzene	33.0300	0.50	40.0000		82.6	73 - 123	4.30	20	
Bromobenzene	17.3500	0.50	20.0000		86.8	75 - 121	5.39	20	
Bromodichloromethane	18.7700	0.50	20.0000		93.8	73 - 124	2.43	20	
Bromoform	19.4400	0.50	20.0000		97.2	70 - 135	2.24	20	
Bromomethane	11.7600	0.50	20.0000		58.8	10 - 166	5.41	20	
Carbon tetrachloride	23.7800	0.50	20.0000		119	65 - 171	0.126	20	
Chlorobenzene	17.2900	0.50	20.0000		86.4	80 - 121	5.77	20	
Chloroethane	20.4600	0.50	20.0000		102	55 - 143	4.40	20	
Chloroform	21.4300	0.50	20.0000		107	65 - 130	1.65	20	
Chloromethane	21.3700	0.50	20.0000		107	21 - 141	5.43	20	
cis-1,2-Dichloroethene	20.8700	0.50	20.0000		104	64 - 126	6.07	20	
cis-1,3-Dichloropropene	17.2200	0.50	20.0000		86.1	70 - 131	3.73	20	
Dibromochloromethane	18.4800	0.50	20.0000		92.4	74 - 125	1.75	20	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

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Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

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

Batch B6G0671 - MSVOA_LL_W (continued)

LCS Dup (B6G0671-BS1) - Continued

Prepared: 7/26/2016 Analyzed: 7/26/2016

Dibromomethane	17.2900	0.50	20.0000		86.4	74 - 116	5.04	20	
Dichlorodifluoromethane	14.2100	0.50	20.0000		71.0	40 - 186	1.49	20	
Ethylbenzene	33.5500	0.50	40.0000		83.9	77 - 130	3.95	20	
Hexachlorobutadiene	18.3100	0.50	20.0000		91.6	52 - 176	3.61	20	
Isopropylbenzene	18.5900	0.50	20.0000		93.0	77 - 144	4.23	20	
m,p-Xylene	35.5200	1.0	40.0000		88.8	84 - 136	3.29	20	
Methylene chloride	17.2600	1.0	20.0000		86.3	72 - 150	5.23	20	
n-Butylbenzene	15.7700	0.50	20.0000		78.8	73 - 154	3.68	20	
n-Propylbenzene	17.5800	0.50	20.0000		87.9	77 - 145	4.72	20	
Naphthalene	11.2800	0.50	20.0000		56.4	55 - 137	6.03	20	
o-Xylene	33.4400	0.50	40.0000		83.6	79 - 135	2.73	20	
sec-Butylbenzene	17.3200	0.50	20.0000		86.6	73 - 157	4.49	20	
Styrene	16.5600	0.50	20.0000		82.8	78 - 125	2.44	20	
tert-Butylbenzene	17.3200	0.50	20.0000		86.6	78 - 149	2.99	20	
Tetrachloroethene	17.9300	0.50	20.0000		89.6	74 - 136	3.29	20	
Toluene	34.0400	0.50	40.0000		85.1	78 - 124	3.44	20	
trans-1,2-Dichloroethene	20.7000	0.50	20.0000		104	66 - 131	5.36	20	
Trichloroethene	17.8400	0.50	20.0000		89.2	78 - 128	3.89	20	
Trichlorofluoromethane	26.5300	0.50	20.0000		133	60 - 170	3.96	20	
Vinyl chloride	17.7200	0.50	20.0000		88.6	55 - 148	3.04	20	
Surrogate: 1,2-Dichloroethane-d4	31.18		25.0000		125	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.58		25.0000		102	61 - 123			
Surrogate: Dibromofluoromethane	30.82		25.0000		123	57 - 147			
Surrogate: Toluene-d8	26.03		25.0000		104	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 Limits	RPD	RPD Limit	Notes

Batch B6G0710 - MSVOA_W

Blank (B6G0710-BLK1)

Prepared: 7/27/2016 Analyzed: 7/27/2016

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

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

Batch B6G0710 - MSVOA_W (continued)

Blank (B6G0710-BLK1) - Continued

Prepared: 7/27/2016 Analyzed: 7/27/2016

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			

Surrogate: 1,2-Dichloroethane-d4	33.52		25.0000		134	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.52		25.0000		102	61 - 123			
Surrogate: Dibromofluoromethane	31.57		25.0000		126	57 - 147			
Surrogate: Toluene-d8	24.92		25.0000		99.7	61 - 119			

LCS (B6G0710-BS1)

Prepared: 7/27/2016 Analyzed: 7/27/2016

1,1,1,2-Tetrachloroethane	19.0800	0.50	20.0000		95.4	76 - 132			
1,1,1-Trichloroethane	19.2500	0.50	20.0000		96.2	72 - 144			
1,1,2,2-Tetrachloroethane	14.0700	0.50	20.0000		70.4	70 - 120			
1,1,2-Trichloroethane	15.4500	0.50	20.0000		77.2	75 - 120			
1,1-Dichloroethane	21.3300	0.50	20.0000		107	65 - 127			
1,1-Dichloroethene	20.0900	0.50	20.0000		100	63 - 142			
1,1-Dichloropropene	18.2100	0.50	20.0000		91.0	78 - 137			
1,2,3-Trichloropropane	15.1400	0.50	20.0000		75.7	73 - 118			
1,2,3-Trichlorobenzene	14.3700	0.50	20.0000		71.8	53 - 164			
1,2,4-Trichlorobenzene	14.5000	0.50	20.0000		72.5	58 - 144			
1,2,4-Trimethylbenzene	16.8100	0.50	20.0000		84.0	75 - 140			
1,2-Dibromo-3-chloropropane	13.3100	0.50	20.0000		66.6	61 - 131			
1,2-Dibromoethane	15.5500	0.50	20.0000		77.8	74 - 125			
1,2-Dichlorobenzene	16.6700	0.50	20.0000		83.4	78 - 122			
1,2-Dichloroethane	18.9400	0.50	20.0000		94.7	70 - 126			
1,2-Dichloropropane	15.5900	0.50	20.0000		78.0	69 - 120			
1,3,5-Trimethylbenzene	17.3500	0.50	20.0000		86.8	73 - 145			
1,3-Dichlorobenzene	17.2400	0.50	20.0000		86.2	76 - 126			
1,3-Dichloropropane	14.9400	0.50	20.0000		74.7	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 Limit	Notes

Batch B6G0710 - MSVOA_W (continued)

LCS (B6G0710-BS1) - Continued

Prepared: 7/27/2016 Analyzed: 7/27/2016

1,4-Dichlorobenzene	16.8100	0.50	20.0000		84.0	77 - 120			
2,2-Dichloropropane	19.4200	0.50	20.0000		97.1	47 - 169			
2-Chlorotoluene	17.2800	0.50	20.0000		86.4	75 - 135			
4-Chlorotoluene	17.3400	0.50	20.0000		86.7	70 - 133			
4-Isopropyltoluene	16.5600	0.50	20.0000		82.8	72 - 153			
Benzene	32.3400	0.50	40.0000		80.8	73 - 123			
Bromobenzene	17.0200	0.50	20.0000		85.1	75 - 121			
Bromodichloromethane	17.9900	0.50	20.0000		90.0	73 - 124			
Bromoform	19.1300	0.50	20.0000		95.6	70 - 135			
Bromomethane	15.3700	0.50	20.0000		76.8	10 - 166			
Carbon tetrachloride	23.8700	0.50	20.0000		119	65 - 171			
Chlorobenzene	16.8600	0.50	20.0000		84.3	80 - 121			
Chloroethane	19.5100	0.50	20.0000		97.6	55 - 143			
Chloroform	20.4700	0.50	20.0000		102	65 - 130			
Chloromethane	22.6100	0.50	20.0000		113	21 - 141			
cis-1,2-Dichloroethene	20.1700	0.50	20.0000		101	64 - 126			
cis-1,3-Dichloropropene	16.7200	0.50	20.0000		83.6	70 - 131			
Dibromochloromethane	18.4000	0.50	20.0000		92.0	74 - 125			
Dibromomethane	16.5300	0.50	20.0000		82.6	74 - 116			
Dichlorodifluoromethane	12.4000	0.50	20.0000		62.0	40 - 186			
Ethylbenzene	33.0300	0.50	40.0000		82.6	77 - 130			
Hexachlorobutadiene	17.7300	0.50	20.0000		88.6	52 - 176			
Isopropylbenzene	18.4000	0.50	20.0000		92.0	77 - 144			
m,p-Xylene	35.2400	1.0	40.0000		88.1	84 - 136			
Methylene chloride	16.6200	1.0	20.0000		83.1	72 - 150			
n-Butylbenzene	15.3500	0.50	20.0000		76.8	73 - 154			
n-Propylbenzene	17.4000	0.50	20.0000		87.0	77 - 145			
Naphthalene	11.6600	0.50	20.0000		58.3	55 - 137			
o-Xylene	32.9900	0.50	40.0000		82.5	79 - 135			
sec-Butylbenzene	16.8800	0.50	20.0000		84.4	73 - 157			
Styrene	16.3200	0.50	20.0000		81.6	78 - 125			
tert-Butylbenzene	17.4000	0.50	20.0000		87.0	78 - 149			
Tetrachloroethene	17.5000	0.50	20.0000		87.5	74 - 136			
Toluene	32.9100	0.50	40.0000		82.3	78 - 124			
trans-1,2-Dichloroethene	19.6100	0.50	20.0000		98.0	66 - 131			
Trichloroethene	17.6300	0.50	20.0000		88.2	78 - 128			
Trichlorofluoromethane	24.5700	0.50	20.0000		123	60 - 170			
Vinyl chloride	17.2200	0.50	20.0000		86.1	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	29.35		25.0000		117	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.36		25.0000		101	61 - 123			
Surrogate: Dibromofluoromethane	28.74		25.0000		115	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

Batch B6G0710 - MSVOA_W (continued)

LCS (B6G0710-BS1) - Continued

Prepared: 7/27/2016 Analyzed: 7/27/2016

Surrogate: Toluene-d8

25.54

25.0000

102

61 - 119

LCS Dup (B6G0710-BSD1)

Prepared: 7/27/2016 Analyzed: 7/27/2016

1,1,1,2-Tetrachloroethane	20.2900	0.50	20.0000	101	76 - 132	6.15	20
1,1,1-Trichloroethane	19.4400	0.50	20.0000	97.2	72 - 144	0.982	20
1,1,2,2-Tetrachloroethane	15.6900	0.50	20.0000	78.4	70 - 120	10.9	20
1,1,2-Trichloroethane	17.3800	0.50	20.0000	86.9	75 - 120	11.8	20
1,1-Dichloroethane	22.7200	0.50	20.0000	114	65 - 127	6.31	20
1,1-Dichloroethene	21.0600	0.50	20.0000	105	63 - 142	4.71	20
1,1-Dichloropropene	19.1800	0.50	20.0000	95.9	78 - 137	5.19	20
1,2,3-Trichloropropane	16.1100	0.50	20.0000	80.6	73 - 118	6.21	20
1,2,3-Trichlorobenzene	15.1800	0.50	20.0000	75.9	53 - 164	5.48	20
1,2,4-Trichlorobenzene	15.2800	0.50	20.0000	76.4	58 - 144	5.24	20
1,2,4-Trimethylbenzene	17.4900	0.50	20.0000	87.4	75 - 140	3.97	20
1,2-Dibromo-3-chloropropane	14.8900	0.50	20.0000	74.4	61 - 131	11.2	20
1,2-Dibromoethane	17.1300	0.50	20.0000	85.6	74 - 125	9.67	20
1,2-Dichlorobenzene	17.5500	0.50	20.0000	87.8	78 - 122	5.14	20
1,2-Dichloroethane	20.6600	0.50	20.0000	103	70 - 126	8.69	20
1,2-Dichloropropane	16.4200	0.50	20.0000	82.1	69 - 120	5.19	20
1,3,5-Trimethylbenzene	17.9500	0.50	20.0000	89.8	73 - 145	3.40	20
1,3-Dichlorobenzene	17.7300	0.50	20.0000	88.6	76 - 126	2.80	20
1,3-Dichloropropane	16.4200	0.50	20.0000	82.1	76 - 117	9.44	20
1,4-Dichlorobenzene	17.5700	0.50	20.0000	87.8	77 - 120	4.42	20
2,2-Dichloropropane	20.5000	0.50	20.0000	102	47 - 169	5.41	20
2-Chlorotoluene	17.9100	0.50	20.0000	89.6	75 - 135	3.58	20
4-Chlorotoluene	17.8900	0.50	20.0000	89.4	70 - 133	3.12	20
4-Isopropyltoluene	17.3900	0.50	20.0000	87.0	72 - 153	4.89	20
Benzene	34.4900	0.50	40.0000	86.2	73 - 123	6.43	20
Bromobenzene	17.9200	0.50	20.0000	89.6	75 - 121	5.15	20
Bromodichloromethane	19.0000	0.50	20.0000	95.0	73 - 124	5.46	20
Bromoform	20.5500	0.50	20.0000	103	70 - 135	7.16	20
Bromomethane	16.3200	0.50	20.0000	81.6	10 - 166	6.00	20
Carbon tetrachloride	24.9400	0.50	20.0000	125	65 - 171	4.38	20
Chlorobenzene	18.1600	0.50	20.0000	90.8	80 - 121	7.42	20
Chloroethane	20.9700	0.50	20.0000	105	55 - 143	7.21	20
Chloroform	21.9100	0.50	20.0000	110	65 - 130	6.80	20
Chloromethane	23.5800	0.50	20.0000	118	21 - 141	4.20	20
cis-1,2-Dichloroethene	20.8600	0.50	20.0000	104	64 - 126	3.36	20
cis-1,3-Dichloropropene	18.3300	0.50	20.0000	91.6	70 - 131	9.19	20
Dibromochloromethane	19.9600	0.50	20.0000	99.8	74 - 125	8.13	20
Dibromomethane	18.0500	0.50	20.0000	90.2	74 - 116	8.79	20
Dichlorodifluoromethane	12.7700	0.50	20.0000	63.8	40 - 186	2.94	20



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

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

Batch B6G0710 - MSVOA_W (continued)

LCS Dup (B6G0710-BSD1) - Continued

Prepared: 7/27/2016 Analyzed: 7/27/2016

Ethylbenzene	34.8800	0.50	40.0000		87.2	77 - 130	5.45	20	
Hexachlorobutadiene	18.8700	0.50	20.0000		94.4	52 - 176	6.23	20	
Isopropylbenzene	19.1600	0.50	20.0000		95.8	77 - 144	4.05	20	
m,p-Xylene	37.3200	1.0	40.0000		93.3	84 - 136	5.73	20	
Methylene chloride	17.2300	1.0	20.0000		86.2	72 - 150	3.60	20	
n-Butylbenzene	15.8900	0.50	20.0000		79.4	73 - 154	3.46	20	
n-Propylbenzene	18.0900	0.50	20.0000		90.4	77 - 145	3.89	20	
Naphthalene	11.9700	0.50	20.0000		59.8	55 - 137	2.62	20	
o-Xylene	35.0100	0.50	40.0000		87.5	79 - 135	5.94	20	
sec-Butylbenzene	17.8500	0.50	20.0000		89.2	73 - 157	5.59	20	
Styrene	17.4400	0.50	20.0000		87.2	78 - 125	6.64	20	
tert-Butylbenzene	18.1200	0.50	20.0000		90.6	78 - 149	4.05	20	
Tetrachloroethene	18.8700	0.50	20.0000		94.4	74 - 136	7.53	20	
Toluene	35.0200	0.50	40.0000		87.6	78 - 124	6.21	20	
trans-1,2-Dichloroethene	20.9600	0.50	20.0000		105	66 - 131	6.66	20	
Trichloroethene	18.6400	0.50	20.0000		93.2	78 - 128	5.57	20	
Trichlorofluoromethane	25.8400	0.50	20.0000		129	60 - 170	5.04	20	
Vinyl chloride	18.0400	0.50	20.0000		90.2	55 - 148	4.65	20	
Surrogate: 1,2-Dichloroethane-d4	30.43		25.0000		122	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.90		25.0000		104	61 - 123			
Surrogate: Dibromofluoromethane	28.06		25.0000		112	57 - 147			
Surrogate: Toluene-d8	25.79		25.0000		103	61 - 119			



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Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

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

Batch B6G0695 - MSSEMI_W

Blank (B6G0695-BLK1)

Prepared: 7/26/2016 Analyzed: 7/26/2016

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	50.42		100.000		50.4	42 - 106			
Surrogate: 2-Fluorobiphenyl	61.66		100.000		61.7	55 - 117			
Surrogate: 4-Terphenyl-d14	87.30		100.000		87.3	52 - 142			
Surrogate: Nitrobenzene-d5	75.78		100.000		75.8	43 - 116			

LCS (B6G0695-BS1)

Prepared: 7/26/2016 Analyzed: 7/26/2016

1,4-Dioxane	105.750	2.0	100.000		106	62 - 127			
Surrogate: 1,2-Dichlorobenzene-d4	52.86		100.000		52.9	42 - 106			
Surrogate: 2-Fluorobiphenyl	63.80		100.000		63.8	55 - 117			
Surrogate: 4-Terphenyl-d14	78.20		100.000		78.2	52 - 142			
Surrogate: Nitrobenzene-d5	87.42		100.000		87.4	43 - 116			

LCS Dup (B6G0695-BS1)

Prepared: 7/26/2016 Analyzed: 7/26/2016

1,4-Dioxane	115.280	2.0	100.000		115	62 - 127	8.62	20	
Surrogate: 1,2-Dichlorobenzene-d4	51.83		100.000		51.8	42 - 106			
Surrogate: 2-Fluorobiphenyl	62.51		100.000		62.5	55 - 117			
Surrogate: 4-Terphenyl-d14	75.09		100.000		75.1	52 - 142			
Surrogate: Nitrobenzene-d5	86.33		100.000		86.3	43 - 116			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 07/28/2016

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 Limit	Notes

Batch B6G0682 - MSSEMI_ISOTOPEDILN_W

Blank (B6G0682-BLK1)

Prepared: 7/26/2016 Analyzed: 7/28/2016

1,4-Dioxane	ND	0.20		NR					
Surrogate: 1,2-Dichlorobenzene-d4	0.6858		1.00000	68.6	31 - 106				
Surrogate: 2-Fluorobiphenyl	0.6353		1.00000	63.5	28 - 122				
Surrogate: 4-Terphenyl-d14	0.6815		1.00000	68.2	43 - 131				
Surrogate: Nitrobenzene-d5	0.6006		1.00000	60.1	20 - 119				

LCS (B6G0682-BS1)

Prepared: 7/26/2016 Analyzed: 7/28/2016

1,4-Dioxane	1.34911	0.20	1.00000	135	49 - 169				
Surrogate: 1,2-Dichlorobenzene-d4	0.6411		1.00000	64.1	31 - 106				
Surrogate: 2-Fluorobiphenyl	0.6079		1.00000	60.8	28 - 122				
Surrogate: 4-Terphenyl-d14	0.6250		1.00000	62.5	43 - 131				
Surrogate: Nitrobenzene-d5	0.5578		1.00000	55.8	20 - 119				

LCS Dup (B6G0682-BS1)

Prepared: 7/26/2016 Analyzed: 7/28/2016

1,4-Dioxane	1.36394	0.20	1.00000	136	49 - 169	1.09	20		
Surrogate: 1,2-Dichlorobenzene-d4	0.6288		1.00000	62.9	31 - 106				
Surrogate: 2-Fluorobiphenyl	0.6146		1.00000	61.5	28 - 122				
Surrogate: 4-Terphenyl-d14	0.6495		1.00000	65.0	43 - 131				
Surrogate: Nitrobenzene-d5	0.6173		1.00000	61.7	20 - 119				



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

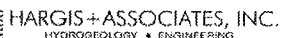
Reported : 07/28/2016

Notes and Definitions

S3	Surrogate recovery outside of laboratory acceptance limit. Unable to confirm matrix effects.
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.



Date: 7/21/14
Page 1 of 1

TASK NO.: 532.15

QA Manager Kevin Fong

Phone 858.455.6500

Fax 858.455.6533

[illegible]

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.

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



August 23, 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 : 1602739

Client Reference : Raytheon Main GETS Monthly Sample, 532.15

Enclosed are the results for sample(s) received on August 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,

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

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 : 08/23/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-080416	1602739-01	Lab prepared water	8/04/16 7:00	8/04/16 11:50
CEFF	1602739-02	Groundwater	8/04/16 7:50	8/04/16 11:50
CBT	1602739-03	Groundwater	8/04/16 7:55	8/04/16 11:50
POX	1602739-04	Groundwater	8/04/16 8:00	8/04/16 11:50
PF	1602739-05	Groundwater	8/04/16 8:05	8/04/16 11:50
INF	1602739-06	Groundwater	8/04/16 8:10	8/04/16 11:50
EW-02	1602739-07	Groundwater	8/04/16 8:50	8/04/16 11:50
MW-29	1602739-08	Groundwater	8/04/16 9:05	8/04/16 11:50

CASE NARRATIVE

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

The samples for SM 5310B analysis were subcontracted to Eurofins Calscience, Inc. with ELAP Cert.#1230.

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 : 08/23/2016

Client Sample ID TB-080416

Lab ID: 1602739-01

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,1,1-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,1,2-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,1-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,1-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,1-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,2,3-Trichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,2-Dibromoethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,2-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,2-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,3-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,3-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
1,4-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
2,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
2-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
4-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
4-Isopropyltoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Benzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Bromobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Bromodichloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Bromoform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Bromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Carbon tetrachloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Chlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Chloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Chloroform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Chloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Dibromochloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	



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 : 08/23/2016

Client Sample ID TB-080416

Lab ID: 1602739-01

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Dichlorodifluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Ethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Hexachlorobutadiene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Isopropylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
m,p-Xylene	ND	1.0	1	B6H0199	08/08/2016	08/08/16 11:25	
Methylene chloride	ND	1.0	1	B6H0199	08/08/2016	08/08/16 11:25	
n-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
n-Propylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Naphthalene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
o-Xylene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
sec-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Styrene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
tert-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Tetrachloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Toluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Trichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Trichlorofluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Vinyl chloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 11:25	
Surrogate: 1,2-Dichloroethane-d4	96.6 %	51 - 157		B6H0199	08/08/2016	08/08/16 11:25	
Surrogate: 4-Bromofluorobenzene	99.4 %	61 - 123		B6H0199	08/08/2016	08/08/16 11:25	
Surrogate: Dibromofluoromethane	97.6 %	57 - 147		B6H0199	08/08/2016	08/08/16 11:25	
Surrogate: Toluene-d8	103 %	61 - 119		B6H0199	08/08/2016	08/08/16 11:25	



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 : 08/23/2016

Client Sample ID CEFF

Lab ID: 1602739-02

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,1,1-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,1,2-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,1-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,1-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,1-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,2,3-Trichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,2-Dibromoethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,2-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,2-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,3-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,3-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
1,4-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
2,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
2-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
4-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
4-Isopropyltoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Benzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Bromobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Bromodichloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Bromoform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Bromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Carbon tetrachloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Chlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Chloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Chloroform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Chloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Dibromochloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	



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 : 08/23/2016

Client Sample ID CEFF

Lab ID: 1602739-02

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Dichlorodifluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Ethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Hexachlorobutadiene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Isopropylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
m,p-Xylene	ND	1.0	1	B6H0199	08/08/2016	08/08/16 12:11	
Methylene chloride	ND	1.0	1	B6H0199	08/08/2016	08/08/16 12:11	
n-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
n-Propylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Naphthalene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
o-Xylene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
sec-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Styrene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
tert-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Tetrachloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Toluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Trichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Trichlorofluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Vinyl chloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:11	
Surrogate: 1,2-Dichloroethane-d4	97.0 %	51 - 157		B6H0199	08/08/2016	08/08/16 12:11	
Surrogate: 4-Bromofluorobenzene	98.8 %	61 - 123		B6H0199	08/08/2016	08/08/16 12:11	
Surrogate: Dibromofluoromethane	97.2 %	57 - 147		B6H0199	08/08/2016	08/08/16 12:11	
Surrogate: Toluene-d8	100 %	61 - 119		B6H0199	08/08/2016	08/08/16 12:11	



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 : 08/23/2016

Client Sample ID CEFF

Lab ID: 1602739-02

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	B6H0327	08/10/2016	08/11/16 08:25	
Surrogate: 1,2-Dichlorobenzene-d4	70.0 %	31 - 106		B6H0327	08/10/2016	08/11/16 08:25	
Surrogate: 2-Fluorobiphenyl	70.8 %	28 - 122		B6H0327	08/10/2016	08/11/16 08:25	
Surrogate: 4-Terphenyl-d14	76.3 %	43 - 131		B6H0327	08/10/2016	08/11/16 08:25	
Surrogate: Nitrobenzene-d5	83.5 %	20 - 119		B6H0327	08/10/2016	08/11/16 08:25	



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 : 08/23/2016

Client Sample ID CBT

Lab ID: 1602739-03

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,1,1-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,1,2-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,1-Dichloroethane	0.51	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,1-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,1-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,2,3-Trichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,2-Dibromoethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,2-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,2-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,3-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,3-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
1,4-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
2,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
2-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
4-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
4-Isopropyltoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Benzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Bromobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Bromodichloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Bromoform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Bromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Carbon tetrachloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Chlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Chloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Chloroform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Chloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Dibromochloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	



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 : 08/23/2016

Client Sample ID CBT

Lab ID: 1602739-03

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Dichlorodifluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Ethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Hexachlorobutadiene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Isopropylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
m,p-Xylene	ND	1.0	1	B6H0199	08/08/2016	08/08/16 12:34	
Methylene chloride	ND	1.0	1	B6H0199	08/08/2016	08/08/16 12:34	
n-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
n-Propylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Naphthalene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
o-Xylene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
sec-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Styrene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
tert-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Tetrachloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Toluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Trichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Trichlorofluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Vinyl chloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:34	
Surrogate: 1,2-Dichloroethane-d4	99.6 %	51 - 157		B6H0199	08/08/2016	08/08/16 12:34	
Surrogate: 4-Bromofluorobenzene	99.7 %	61 - 123		B6H0199	08/08/2016	08/08/16 12:34	
Surrogate: Dibromofluoromethane	101 %	57 - 147		B6H0199	08/08/2016	08/08/16 12:34	
Surrogate: Toluene-d8	103 %	61 - 119		B6H0199	08/08/2016	08/08/16 12:34	



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 : 08/23/2016

Client Sample ID CBT

Lab ID: 1602739-03

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	B6H0327	08/10/2016	08/11/16 08:52	
Surrogate: 1,2-Dichlorobenzene-d4	67.2 %	31 - 106		B6H0327	08/10/2016	08/11/16 08:52	
Surrogate: 2-Fluorobiphenyl	74.0 %	28 - 122		B6H0327	08/10/2016	08/11/16 08:52	
Surrogate: 4-Terphenyl-d14	81.1 %	43 - 131		B6H0327	08/10/2016	08/11/16 08:52	
Surrogate: Nitrobenzene-d5	81.6 %	20 - 119		B6H0327	08/10/2016	08/11/16 08:52	



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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 : 08/23/2016

Client Sample ID POX

Lab ID: 1602739-04

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)	230	5.0	1	B6H0321	08/10/2016	08/10/16 10:09	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B6H0321	08/10/2016	08/10/16 10:09	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B6H0321	08/10/2016	08/10/16 10:09	
Alkalinity, Total (as CaCO ₃)	230	5.0	1	B6H0321	08/10/2016	08/10/16 10:09	

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,1,1-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,1,2-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,1-Dichloroethane	0.57	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,1-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,1-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,2,3-Trichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,2-Dibromoethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,2-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,2-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,3-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,3-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
1,4-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
2,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
2-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
4-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
4-Isopropyltoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Benzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Bromobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Bromodichloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Bromoform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	



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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 : 08/23/2016

Client Sample ID POX

Lab ID: 1602739-04

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Carbon tetrachloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Chlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Chloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Chloroform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Chloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Dibromochloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Dibromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Dichlorodifluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Ethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Hexachlorobutadiene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Isopropylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
m,p-Xylene	ND	1.0	1	B6H0199	08/08/2016	08/08/16 12:57	
Methylene chloride	ND	1.0	1	B6H0199	08/08/2016	08/08/16 12:57	
n-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
n-Propylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Naphthalene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
o-Xylene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
sec-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Styrene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
tert-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Tetrachloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Toluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Trichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Trichlorofluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Vinyl chloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 12:57	
Surrogate: 1,2-Dichloroethane-d4	99.4 %	51 - 157		B6H0199	08/08/2016	08/08/16 12:57	
Surrogate: 4-Bromofluorobenzene	98.5 %	61 - 123		B6H0199	08/08/2016	08/08/16 12:57	
Surrogate: Dibromofluoromethane	98.6 %	57 - 147		B6H0199	08/08/2016	08/08/16 12:57	
Surrogate: Toluene-d8	102 %	61 - 119		B6H0199	08/08/2016	08/08/16 12:57	



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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 : 08/23/2016

Client Sample ID POX

Lab ID: 1602739-04

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	B6H0327	08/10/2016	08/11/16 09:20	
Surrogate: 1,2-Dichlorobenzene-d4	69.9 %	31 - 106		B6H0327	08/10/2016	08/11/16 09:20	
Surrogate: 2-Fluorobiphenyl	75.4 %	28 - 122		B6H0327	08/10/2016	08/11/16 09:20	
Surrogate: 4-Terphenyl-d14	81.2 %	43 - 131		B6H0327	08/10/2016	08/11/16 09:20	
Surrogate: Nitrobenzene-d5	85.2 %	20 - 119		B6H0327	08/10/2016	08/11/16 09:20	



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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 : 08/23/2016

Client Sample ID PF

Lab ID: 1602739-05

UV Absorption by EPA 415.3

Analyst: GO

Analyte	Result (1/cm)	PQL (1/cm)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
UV Absorption	ND	0.01	1	B6H0183	08/05/2016	08/05/16 14:50	

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	B6H0321	08/10/2016	08/10/16 10:09	
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0	1	B6H0321	08/10/2016	08/10/16 10:09	
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0	1	B6H0321	08/10/2016	08/10/16 10:09	
Alkalinity, Total (as CaCO₃)	230	5.0	1	B6H0321	08/10/2016	08/10/16 10:09	

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

Analyst: SL, A

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Suspended	ND	1.0	1	B6H0270	08/09/2016	08/09/16 09:40	



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 : 08/23/2016

Client Sample ID INF

Lab ID: 1602739-06

Bromide by Ion Chromatography EPA 300

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.30	0.05	1	B6H0200	08/05/2016	08/05/16 12:10	

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,1,1-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,1,2-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,1-Dichloroethane	1.0	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,1-Dichloroethene	79	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,1-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,2,3-Trichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,2-Dibromoethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,2-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,2-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,3-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,3-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
1,4-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
2,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
2-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
4-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
4-Isopropyltoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Benzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Bromobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Bromodichloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Bromoform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Bromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Carbon tetrachloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Chlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	



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 : 08/23/2016

Client Sample ID INF

Lab ID: 1602739-06

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Chloroform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Chloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Dibromochloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Dibromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Dichlorodifluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Ethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Hexachlorobutadiene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Isopropylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
m,p-Xylene	ND	1.0	1	B6H0199	08/08/2016	08/08/16 14:30	
Methylene chloride	ND	1.0	1	B6H0199	08/08/2016	08/08/16 14:30	
n-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
n-Propylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Naphthalene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
o-Xylene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
sec-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Styrene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
tert-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Tetrachloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Toluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Trichloroethene	0.78	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Trichlorofluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
Vinyl chloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>100 %</i>	<i>51 - 157</i>		B6H0199	08/08/2016	<i>08/08/16 14:30</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>101 %</i>	<i>61 - 123</i>		B6H0199	08/08/2016	<i>08/08/16 14:30</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>103 %</i>	<i>57 - 147</i>		B6H0199	08/08/2016	<i>08/08/16 14:30</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>61 - 119</i>		B6H0199	08/08/2016	<i>08/08/16 14:30</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 : 08/23/2016

Client Sample ID INF

Lab ID: 1602739-06

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	21	2.0	1	B6H0292	08/09/2016	08/11/16 11:17	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>62.3 %</i>	<i>42 - 106</i>		B6H0292	08/09/2016	<i>08/11/16 11:17</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>72.3 %</i>	<i>55 - 117</i>		B6H0292	08/09/2016	<i>08/11/16 11:17</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>97.8 %</i>	<i>52 - 142</i>		B6H0292	08/09/2016	<i>08/11/16 11:17</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>71.1 %</i>	<i>43 - 116</i>		B6H0292	08/09/2016	<i>08/11/16 11:17</i>	



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Hargis & Associates, Inc.

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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 08/23/2016

Client Sample ID EW-02

Lab ID: 1602739-07

Bromide by Ion Chromatography EPA 300

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.24	0.05	1	B6H0200	08/05/2016	08/05/16 12:21	

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,1,1-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,1,2-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,1-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,1-Dichloroethene	25	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,1-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,2,3-Trichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,2-Dibromoethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,2-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,2-Dichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,3-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,3-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
1,4-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
2,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
2-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
4-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
4-Isopropyltoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Benzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Bromobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Bromodichloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Bromoform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Bromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Carbon tetrachloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Chlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	



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 : 08/23/2016

Client Sample ID EW-02

Lab ID: 1602739-07

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Chloroform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Chloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Dibromochloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Dibromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Dichlorodifluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Ethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Hexachlorobutadiene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Isopropylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
m,p-Xylene	ND	1.0	1	B6H0199	08/08/2016	08/08/16 13:21	
Methylene chloride	ND	1.0	1	B6H0199	08/08/2016	08/08/16 13:21	
n-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
n-Propylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Naphthalene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
o-Xylene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
sec-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Styrene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
tert-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Tetrachloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Toluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Trichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Trichlorofluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Vinyl chloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 13:21	
Surrogate: 1,2-Dichloroethane-d4	97.0 %	51 - 157		B6H0199	08/08/2016	08/08/16 13:21	
Surrogate: 4-Bromofluorobenzene	99.6 %	61 - 123		B6H0199	08/08/2016	08/08/16 13:21	
Surrogate: Dibromofluoromethane	97.6 %	57 - 147		B6H0199	08/08/2016	08/08/16 13:21	
Surrogate: Toluene-d8	101 %	61 - 119		B6H0199	08/08/2016	08/08/16 13:21	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 08/23/2016

Client Sample ID EW-02

Lab ID: 1602739-07

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	6.5	2.0	1	B6H0292	08/09/2016	08/11/16 11:44	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>58.7 %</i>	<i>42 - 106</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 11:44</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>69.0 %</i>	<i>55 - 117</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 11:44</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>102 %</i>	<i>52 - 142</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 11:44</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>68.9 %</i>	<i>43 - 116</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 11:44</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 : 08/23/2016

Client Sample ID MW-29

Lab ID: 1602739-08

Bromide by Ion Chromatography EPA 300

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Bromide	0.52	0.05	1	B6H0200	08/05/2016	08/05/16 12:33	

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,1,1-Trichloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,1,2-Trichloroethane	1.0	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,1-Dichloroethane	3.3	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,1-Dichloroethene	250	5.0	10	B6H0199	08/08/2016	08/08/16 16:03	
1,1-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,2,3-Trichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,2-Dibromoethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,2-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,2-Dichloroethane	0.57	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,3-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,3-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
1,4-Dichlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
2,2-Dichloropropane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
2-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
4-Chlorotoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
4-Isopropyltoluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Benzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Bromobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Bromodichloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Bromoform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Bromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Carbon tetrachloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Chlorobenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	



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 : 08/23/2016

Client Sample ID MW-29

Lab ID: 1602739-08

Volatile Organic Compounds by EPA 8260B

Analyst: MFR

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloroethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Chloroform	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Chloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Dibromochloromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Dibromomethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Dichlorodifluoromethane	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Ethylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Hexachlorobutadiene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Isopropylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
m,p-Xylene	ND	1.0	1	B6H0199	08/08/2016	08/08/16 14:07	
Methylene chloride	ND	1.0	1	B6H0199	08/08/2016	08/08/16 14:07	
n-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
n-Propylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Naphthalene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
o-Xylene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
sec-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Styrene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
tert-Butylbenzene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Tetrachloroethene	0.88	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Toluene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Trichloroethene	3.1	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Trichlorofluoromethane	1.2	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
Vinyl chloride	ND	0.50	1	B6H0199	08/08/2016	08/08/16 14:07	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>	<i>51 - 157</i>		B6H0199	08/08/2016	<i>08/08/16 16:03</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>103 %</i>	<i>51 - 157</i>		B6H0199	08/08/2016	<i>08/08/16 14:07</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.9 %</i>	<i>61 - 123</i>		B6H0199	08/08/2016	<i>08/08/16 16:03</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>101 %</i>	<i>61 - 123</i>		B6H0199	08/08/2016	<i>08/08/16 14:07</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>	<i>57 - 147</i>		B6H0199	08/08/2016	<i>08/08/16 14:07</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>100 %</i>	<i>57 - 147</i>		B6H0199	08/08/2016	<i>08/08/16 16:03</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>61 - 119</i>		B6H0199	08/08/2016	<i>08/08/16 14:07</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>61 - 119</i>		B6H0199	08/08/2016	<i>08/08/16 16:03</i>	



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 08/23/2016

Client Sample ID MW-29

Lab ID: 1602739-08

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	77	2.0	1	B6H0292	08/09/2016	08/11/16 12:12	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>65.8 %</i>	<i>42 - 106</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 12:12</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>76.9 %</i>	<i>55 - 117</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 12:12</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>103 %</i>	<i>52 - 142</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 12:12</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>73.2 %</i>	<i>43 - 116</i>		<i>B6H0292</i>	<i>08/09/2016</i>	<i>08/11/16 12:12</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

Batch B6H0321 - No_Prep_WC1_W

Blank (B6H0321-BLK1)

Prepared: 8/10/2016 Analyzed: 8/10/2016

Alkalinity, Bicarbonate (as CaCO ₃)	ND	5.0			NR				
Alkalinity, Carbonate (as CaCO ₃)	ND	5.0			NR				
Alkalinity, Hydroxide (as CaCO ₃)	ND	5.0			NR				
Alkalinity, Total (as CaCO ₃)	ND	5.0			NR				

LCS (B6H0321-BS1)

Prepared: 8/10/2016 Analyzed: 8/10/2016

Alkalinity, Total (as CaCO ₃)	100.410	5.0	99.9580		100	80 - 120			

Duplicate (B6H0321-DUP1)

Source: 1602765-01

Prepared: 8/10/2016 Analyzed: 8/10/2016

Alkalinity, Total (as CaCO ₃)	196.720	5.0		196.720	NR		0.00	20	

Matrix Spike (B6H0321-MS1)

Source: 1602765-01

Prepared: 8/10/2016 Analyzed: 8/10/2016

Alkalinity, Total (as CaCO ₃)	401.640	10	199.916	196.720	103	80 - 120			

Matrix Spike Dup (B6H0321-MSD1)

Source: 1602765-01

Prepared: 8/10/2016 Analyzed: 8/10/2016

Alkalinity, Total (as CaCO ₃)	403.690	10	199.916	196.720	104	80 - 120	0.509	20	



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

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

Batch B6H0270 - No_Prep_WC1_W

Blank (B6H0270-BLK1)

Prepared: 8/9/2016 Analyzed: 8/9/2016

Residue, Suspended

ND

1.0

NR

LCS (B6H0270-BS1)

Prepared: 8/9/2016 Analyzed: 8/9/2016

Residue, Suspended

96.0000

10

92.1000

104

80 - 120

Duplicate (B6H0270-DUP1)

Source: 1602707-01

Prepared: 8/9/2016 Analyzed: 8/9/2016

Residue, Suspended

411.667

17

388.333

NR

5.83

10



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Reported : 08/23/2016

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

Batch B6H0200 - No_Prep_IC1_W

Blank (B6H0200-BLK1)

Prepared: 8/5/2016 Analyzed: 8/5/2016

Bromide ND 0.05 NR

LCS (B6H0200-BS1)

Prepared: 8/5/2016 Analyzed: 8/5/2016

Bromide 0.940900 0.05 1.00000 94.1 90 - 110

Duplicate (B6H0200-DUP1)

Source: 1602739-06

Prepared: 8/5/2016 Analyzed: 8/5/2016

Bromide 0.302200 0.05 0.295300 NR 2.31 20

Matrix Spike (B6H0200-MS1)

Source: 1602739-06

Prepared: 8/5/2016 Analyzed: 8/5/2016

Bromide 3.08210 0.05 2.50000 0.295300 111 80 - 120

Matrix Spike Dup (B6H0200-MSD1)

Source: 1602739-06

Prepared: 8/5/2016 Analyzed: 8/5/2016

Bromide 3.36580 0.05 2.50000 0.295300 123 80 - 120 8.80 20 M1



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Project Number : Raytheon Main GETS Monthly Sample, 5

Report To : Steve Netto

Reported : 08/23/2016

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

Batch B6H0183 - No_Prep_II_W

Blank (B6H0183-BLK1)

Prepared: 8/5/2016 Analyzed: 8/5/2016

UV Absorption

ND

0.01

NR

Duplicate (B6H0183-DUP1)

Source: 1602739-05

Prepared: 8/5/2016 Analyzed: 8/5/2016

UV Absorption

ND

0.01

ND

NR

20



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Report To : Steve Netto

Reported : 08/23/2016

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 Limit	Notes

Batch B6H0199 - MSVOA_LL_W

Blank (B6H0199-BLK1)

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

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 Limit	Notes

Batch B6H0199 - MSVOA_LL_W (continued)

Blank (B6H0199-BLK1) - Continued

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

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>	<i>23.76</i>		<i>25.0000</i>		<i>95.0</i>	<i>51 - 157</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>25.34</i>		<i>25.0000</i>		<i>101</i>	<i>61 - 123</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.23</i>		<i>25.0000</i>		<i>96.9</i>	<i>57 - 147</i>			
<i>Surrogate: Toluene-d8</i>	<i>25.46</i>		<i>25.0000</i>		<i>102</i>	<i>61 - 119</i>			

LCS (B6H0199-BS1)

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

1,1,1,2-Tetrachloroethane	22.6200	0.50	20.0000		113	76 - 132
1,1,1-Trichloroethane	21.8400	0.50	20.0000		109	72 - 144
1,1,2,2-Tetrachloroethane	19.5700	0.50	20.0000		97.8	70 - 120
1,1,2-Trichloroethane	18.4700	0.50	20.0000		92.4	75 - 120
1,1-Dichloroethane	23.4800	0.50	20.0000		117	65 - 127
1,1-Dichloroethene	18.0300	0.50	20.0000		90.2	63 - 142
1,1-Dichloropropene	21.5800	0.50	20.0000		108	78 - 137
1,2,3-Trichloropropane	18.4700	0.50	20.0000		92.4	73 - 118
1,2,3-Trichlorobenzene	19.7100	0.50	20.0000		98.6	53 - 164
1,2,4-Trichlorobenzene	20.5700	0.50	20.0000		103	58 - 144
1,2,4-Trimethylbenzene	21.7300	0.50	20.0000		109	75 - 140
1,2-Dibromo-3-chloropropane	18.1300	0.50	20.0000		90.6	61 - 131
1,2-Dibromoethane	19.0300	0.50	20.0000		95.2	74 - 125
1,2-Dichlorobenzene	20.1400	0.50	20.0000		101	78 - 122
1,2-Dichloroethane	19.2600	0.50	20.0000		96.3	70 - 126
1,2-Dichloropropane	19.8400	0.50	20.0000		99.2	69 - 120
1,3,5-Trimethylbenzene	21.7100	0.50	20.0000		109	73 - 145
1,3-Dichlorobenzene	20.4100	0.50	20.0000		102	76 - 126
1,3-Dichloropropane	19.9700	0.50	20.0000		99.8	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 Limit	Notes

Batch B6H0199 - MSVOA_LL_W (continued)

LCS (B6H0199-BS1) - Continued

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

1,4-Dichlorobenzene	20.9900	0.50	20.0000		105	77 - 120			
2,2-Dichloropropane	23.0300	0.50	20.0000		115	47 - 169			
2-Chlorotoluene	21.8800	0.50	20.0000		109	75 - 135			
4-Chlorotoluene	21.7300	0.50	20.0000		109	70 - 133			
4-Isopropyltoluene	22.1300	0.50	20.0000		111	72 - 153			
Benzene	41.1400	0.50	40.0000		103	73 - 123			
Bromobenzene	20.7300	0.50	20.0000		104	75 - 121			
Bromodichloromethane	19.7100	0.50	20.0000		98.6	73 - 124			
Bromoform	18.9600	0.50	20.0000		94.8	70 - 135			
Bromomethane	31.4200	0.50	20.0000		157	10 - 166			
Carbon tetrachloride	24.2600	0.50	20.0000		121	65 - 171			
Chlorobenzene	20.1800	0.50	20.0000		101	80 - 121			
Chloroethane	25.5700	0.50	20.0000		128	55 - 143			
Chloroform	19.7900	0.50	20.0000		99.0	65 - 130			
Chloromethane	21.8700	0.50	20.0000		109	21 - 141			
cis-1,2-Dichloroethene	20.1500	0.50	20.0000		101	64 - 126			
cis-1,3-Dichloropropene	21.9800	0.50	20.0000		110	70 - 131			
Dibromochloromethane	21.2600	0.50	20.0000		106	74 - 125			
Dibromomethane	18.8400	0.50	20.0000		94.2	74 - 116			
Dichlorodifluoromethane	29.5800	0.50	20.0000		148	40 - 186			
Ethylbenzene	40.3700	0.50	40.0000		101	77 - 130			
Hexachlorobutadiene	20.7400	0.50	20.0000		104	52 - 176			
Isopropylbenzene	23.9000	0.50	20.0000		120	77 - 144			
m,p-Xylene	43.3100	1.0	40.0000		108	84 - 136			
Methylene chloride	20.5100	1.0	20.0000		103	72 - 150			
n-Butylbenzene	23.1500	0.50	20.0000		116	73 - 154			
n-Propylbenzene	22.2800	0.50	20.0000		111	77 - 145			
Naphthalene	19.9300	0.50	20.0000		99.6	55 - 137			
o-Xylene	41.4000	0.50	40.0000		104	79 - 135			
sec-Butylbenzene	22.2000	0.50	20.0000		111	73 - 157			
Styrene	21.2400	0.50	20.0000		106	78 - 125			
tert-Butylbenzene	21.6500	0.50	20.0000		108	78 - 149			
Tetrachloroethene	21.1400	0.50	20.0000		106	74 - 136			
Toluene	40.0400	0.50	40.0000		100	78 - 124			
trans-1,2-Dichloroethene	24.8400	0.50	20.0000		124	66 - 131			
Trichloroethene	19.7900	0.50	20.0000		99.0	78 - 128			
Trichlorofluoromethane	20.6200	0.50	20.0000		103	60 - 170			
Vinyl chloride	22.1300	0.50	20.0000		111	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	23.72		25.0000		94.9	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.42		25.0000		102	61 - 123			
Surrogate: Dibromofluoromethane	24.62		25.0000		98.5	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

Batch B6H0199 - MSVOA_LL_W (continued)

LCS (B6H0199-BS1) - Continued

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

Surrogate: Toluene-d8 25.27 25.0000 101 61 - 119

Matrix Spike (B6H0199-MS1)

Source: 1602748-06

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

1,1,1,2-Tetrachloroethane	23.6800	0.50	20.0000	ND	118	76 - 132			
1,1,1-Trichloroethane	24.6000	0.50	20.0000	ND	123	72 - 144			
1,1,2,2-Tetrachloroethane	21.5100	0.50	20.0000	ND	108	70 - 120			
1,1,2-Trichloroethane	20.6700	0.50	20.0000	ND	103	75 - 120			
1,1-Dichloroethane	26.2700	0.50	20.0000	ND	131	65 - 127			M1
1,1-Dichloroethene	20.3200	0.50	20.0000	ND	102	63 - 142			
1,1-Dichloropropene	22.8500	0.50	20.0000	ND	114	78 - 137			
1,2,3-Trichloropropane	20.5400	0.50	20.0000	ND	103	73 - 118			
1,2,3-Trichlorobenzene	20.9800	0.50	20.0000	ND	105	53 - 164			
1,2,4-Trichlorobenzene	21.3200	0.50	20.0000	ND	107	58 - 144			
1,2,4-Trimethylbenzene	21.8500	0.50	20.0000	ND	109	75 - 140			
1,2-Dibromo-3-chloropropane	20.2700	0.50	20.0000	ND	101	61 - 131			
1,2-Dibromoethane	20.6000	0.50	20.0000	ND	103	74 - 125			
1,2-Dichlorobenzene	20.8100	0.50	20.0000	ND	104	78 - 122			
1,2-Dichloroethane	20.9400	0.50	20.0000	ND	105	70 - 126			
1,2-Dichloropropane	21.4200	0.50	20.0000	ND	107	69 - 120			
1,3,5-Trimethylbenzene	22.0900	0.50	20.0000	ND	110	73 - 145			
1,3-Dichlorobenzene	21.2500	0.50	20.0000	ND	106	76 - 126			
1,3-Dichloropropane	21.6400	0.50	20.0000	ND	108	76 - 117			
1,4-Dichlorobenzene	21.2300	0.50	20.0000	ND	106	77 - 120			
2,2-Dichloropropane	20.9400	0.50	20.0000	ND	105	47 - 169			
2-Chlorotoluene	22.3000	0.50	20.0000	ND	112	75 - 135			
4-Chlorotoluene	21.9600	0.50	20.0000	ND	110	77 - 130			
4-Isopropyltoluene	22.4800	0.50	20.0000	ND	112	72 - 153			
Benzene	43.7300	0.50	40.0000	ND	109	73 - 123			
Bromobenzene	21.3500	0.50	20.0000	ND	107	75 - 121			
Bromodichloromethane	21.2400	0.50	20.0000	ND	106	73 - 124			
Bromoform	20.9900	0.50	20.0000	ND	105	70 - 135			
Bromomethane	19.9300	0.50	20.0000	ND	99.6	10 - 166			
Carbon tetrachloride	25.1600	0.50	20.0000	ND	126	65 - 171			
Chlorobenzene	21.6700	0.50	20.0000	ND	108	80 - 121			
Chloroethane	25.9500	0.50	20.0000	ND	130	55 - 143			
Chloroform	21.9100	0.50	20.0000	ND	110	65 - 130			
Chloromethane	36.7400	0.50	20.0000	0.310000	182	21 - 141			M1
cis-1,2-Dichloroethene	22.0200	0.50	20.0000	ND	110	64 - 126			
cis-1,3-Dichloropropene	21.5400	0.50	20.0000	ND	108	70 - 131			
Dibromochloromethane	22.3200	0.50	20.0000	ND	112	74 - 125			
Dibromomethane	20.8200	0.50	20.0000	ND	104	74 - 116			
Dichlorodifluoromethane	32.6700	0.50	20.0000	ND	163	40 - 186			



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

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

Batch B6H0199 - MSVOA_LL_W (continued)

Matrix Spike (B6H0199-MS1) - Continued

Source: 1602748-06

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

Ethylbenzene	43.2000	0.50	40.0000	ND	108	77 - 130			
Hexachlorobutadiene	20.9800	0.50	20.0000	ND	105	52 - 176			
Isopropylbenzene	24.3400	0.50	20.0000	ND	122	77 - 144			
m,p-Xylene	46.0500	1.0	40.0000	ND	115	84 - 136			
Methylene chloride	23.5500	1.0	20.0000	ND	118	72 - 150			
n-Butylbenzene	22.9200	0.50	20.0000	ND	115	73 - 154			
n-Propylbenzene	22.6100	0.50	20.0000	ND	113	77 - 145			
Naphthalene	22.1900	0.50	20.0000	ND	111	55 - 137			
o-Xylene	44.2700	0.50	40.0000	ND	111	79 - 135			
sec-Butylbenzene	22.6000	0.50	20.0000	ND	113	73 - 157			
Styrene	22.3200	0.50	20.0000	ND	112	78 - 125			
tert-Butylbenzene	22.5900	0.50	20.0000	ND	113	78 - 149			
Tetrachloroethene	21.8700	0.50	20.0000	ND	109	74 - 136			
Toluene	42.8100	0.50	40.0000	ND	107	78 - 124			
trans-1,2-Dichloroethene	26.8900	0.50	20.0000	ND	134	66 - 131			M1
Trichloroethene	20.8900	0.50	20.0000	ND	104	78 - 128			
Trichlorofluoromethane	24.0300	0.50	20.0000	ND	120	60 - 170			
Vinyl chloride	26.4800	0.50	20.0000	ND	132	55 - 148			
Surrogate: 1,2-Dichloroethane-d4	25.60		25.0000		102	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.30		25.0000		101	61 - 123			
Surrogate: Dibromofluoromethane	25.19		25.0000		101	57 - 147			
Surrogate: Toluene-d8	24.65		25.0000		98.6	61 - 119			

Matrix Spike Dup (B6H0199-MSD1)

Source: 1602748-06

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

1,1,1,2-Tetrachloroethane	23.8100	0.50	20.0000	ND	119	76 - 132	0.547	20
1,1,1-Trichloroethane	24.1100	0.50	20.0000	ND	121	72 - 144	2.01	20
1,1,2,2-Tetrachloroethane	21.8300	0.50	20.0000	ND	109	70 - 120	1.48	20
1,1,2-Trichloroethane	20.5900	0.50	20.0000	ND	103	75 - 120	0.388	20
1,1-Dichloroethane	25.4900	0.50	20.0000	ND	127	65 - 127	3.01	20
1,1-Dichloroethene	19.9700	0.50	20.0000	ND	99.8	63 - 142	1.74	20
1,1-Dichloropropene	22.9800	0.50	20.0000	ND	115	78 - 137	0.567	20
1,2,3-Trichloropropane	20.2500	0.50	20.0000	ND	101	73 - 118	1.42	20
1,2,3-Trichlorobenzene	20.5600	0.50	20.0000	ND	103	53 - 164	2.02	20
1,2,4-Trichlorobenzene	21.2100	0.50	20.0000	ND	106	58 - 144	0.517	20
1,2,4-Trimethylbenzene	21.7700	0.50	20.0000	ND	109	75 - 140	0.367	20
1,2-Dibromo-3-chloropropane	20.2200	0.50	20.0000	ND	101	61 - 131	0.247	20
1,2-Dibromoethane	20.5900	0.50	20.0000	ND	103	74 - 125	0.0486	20
1,2-Dichlorobenzene	21.0800	0.50	20.0000	ND	105	78 - 122	1.29	20
1,2-Dichloroethane	20.9600	0.50	20.0000	ND	105	70 - 126	0.0955	20
1,2-Dichloropropane	21.1900	0.50	20.0000	ND	106	69 - 120	1.08	20
1,3,5-Trimethylbenzene	22.3700	0.50	20.0000	ND	112	73 - 145	1.26	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 : 08/23/2016

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
Batch B6H0199 - MSVOA_LL_W (continued)									
Matrix Spike Dup (B6H0199-MSD1) - Continued		Source: 1602748-06		Prepared: 8/8/2016 Analyzed: 8/8/2016					
1,3-Dichlorobenzene	21.4900	0.50	20.0000	ND	107	76 - 126	1.12	20	
1,3-Dichloropropane	21.1100	0.50	20.0000	ND	106	76 - 117	2.48	20	
1,4-Dichlorobenzene	21.4500	0.50	20.0000	ND	107	77 - 120	1.03	20	
2,2-Dichloropropane	21.3900	0.50	20.0000	ND	107	47 - 169	2.13	20	
2-Chlorotoluene	22.4000	0.50	20.0000	ND	112	75 - 135	0.447	20	
4-Chlorotoluene	22.2100	0.50	20.0000	ND	111	77 - 130	1.13	20	
4-Isopropyltoluene	22.4600	0.50	20.0000	ND	112	72 - 153	0.0890	20	
Benzene	43.3400	0.50	40.0000	ND	108	73 - 123	0.896	20	
Bromobenzene	21.3100	0.50	20.0000	ND	107	75 - 121	0.188	20	
Bromodichloromethane	21.1400	0.50	20.0000	ND	106	73 - 124	0.472	20	
Bromoform	20.8400	0.50	20.0000	ND	104	70 - 135	0.717	20	
Bromomethane	23.1300	0.50	20.0000	ND	116	10 - 166	14.9	20	
Carbon tetrachloride	25.1800	0.50	20.0000	ND	126	65 - 171	0.0795	20	
Chlorobenzene	21.3700	0.50	20.0000	ND	107	80 - 121	1.39	20	
Chloroethane	25.8700	0.50	20.0000	ND	129	55 - 143	0.309	20	
Chloroform	21.5100	0.50	20.0000	ND	108	65 - 130	1.84	20	
Chloromethane	34.6900	0.50	20.0000	0.310000	172	21 - 141	5.74	20	M1
cis-1,2-Dichloroethene	21.5000	0.50	20.0000	ND	108	64 - 126	2.39	20	
cis-1,3-Dichloropropene	21.4700	0.50	20.0000	ND	107	70 - 131	0.326	20	
Dibromochloromethane	22.5800	0.50	20.0000	ND	113	74 - 125	1.16	20	
Dibromomethane	20.0800	0.50	20.0000	ND	100	74 - 116	3.62	20	
Dichlorodifluoromethane	31.6700	0.50	20.0000	ND	158	40 - 186	3.11	20	
Ethylbenzene	42.8900	0.50	40.0000	ND	107	77 - 130	0.720	20	
Hexachlorobutadiene	21.1000	0.50	20.0000	ND	106	52 - 176	0.570	20	
Isopropylbenzene	24.4400	0.50	20.0000	ND	122	77 - 144	0.410	20	
m,p-Xylene	45.8400	1.0	40.0000	ND	115	84 - 136	0.457	20	
Methylene chloride	22.8300	1.0	20.0000	ND	114	72 - 150	3.10	20	
n-Butylbenzene	23.0800	0.50	20.0000	ND	115	73 - 154	0.696	20	
n-Propylbenzene	22.7600	0.50	20.0000	ND	114	77 - 145	0.661	20	
Naphthalene	22.0800	0.50	20.0000	ND	110	55 - 137	0.497	20	
o-Xylene	43.5200	0.50	40.0000	ND	109	79 - 135	1.71	20	
sec-Butylbenzene	22.7900	0.50	20.0000	ND	114	73 - 157	0.837	20	
Styrene	22.2900	0.50	20.0000	ND	111	78 - 125	0.134	20	
tert-Butylbenzene	22.8300	0.50	20.0000	ND	114	78 - 149	1.06	20	
Tetrachloroethene	21.3000	0.50	20.0000	ND	106	74 - 136	2.64	20	
Toluene	42.4400	0.50	40.0000	ND	106	78 - 124	0.868	20	
trans-1,2-Dichloroethene	26.6000	0.50	20.0000	ND	133	66 - 131	1.08	20	M1
Trichloroethene	20.9000	0.50	20.0000	ND	104	78 - 128	0.0479	20	
Trichlorofluoromethane	22.8000	0.50	20.0000	ND	114	60 - 170	5.25	20	
Vinyl chloride	26.3600	0.50	20.0000	ND	132	55 - 148	0.454	20	
Surrogate: 1,2-Dichloroethane-d4	25.07		25.0000		100	51 - 157			



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 : 08/23/2016

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

Batch B6H0199 - MSVOA_LL_W (continued)

Matrix Spike Dup (B6H0199-MSD1) - Continued

Source: 1602748-06

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

Surrogate: 4-Bromofluorobenzene	25.55	25.0000	102	61 - 123
Surrogate: Dibromofluoromethane	25.24	25.0000	101	57 - 147
Surrogate: Toluene-d8	24.95	25.0000	99.8	61 - 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 : 08/23/2016

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

Batch B6H0292 - MSSEMI_W

Blank (B6H0292-BLK1)

Prepared: 8/9/2016 Analyzed: 8/11/2016

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	53.18		100.000		53.2	42 - 106			
Surrogate: 2-Fluorobiphenyl	68.85		100.000		68.8	55 - 117			
Surrogate: 4-Terphenyl-d14	95.03		100.000		95.0	52 - 142			
Surrogate: Nitrobenzene-d5	60.88		100.000		60.9	43 - 116			

LCS (B6H0292-BS1)

Prepared: 8/9/2016 Analyzed: 8/11/2016

1,4-Dioxane	101.410	2.0	100.000		101	62 - 127			
Surrogate: 1,2-Dichlorobenzene-d4	67.38		100.000		67.4	42 - 106			
Surrogate: 2-Fluorobiphenyl	82.69		100.000		82.7	55 - 117			
Surrogate: 4-Terphenyl-d14	91.47		100.000		91.5	52 - 142			
Surrogate: Nitrobenzene-d5	75.97		100.000		76.0	43 - 116			

LCS Dup (B6H0292-BS1)

Prepared: 8/9/2016 Analyzed: 8/11/2016

1,4-Dioxane	104.550	2.0	100.000		105	62 - 127	3.05	20	
Surrogate: 1,2-Dichlorobenzene-d4	68.54		100.000		68.5	42 - 106			
Surrogate: 2-Fluorobiphenyl	85.97		100.000		86.0	55 - 117			
Surrogate: 4-Terphenyl-d14	90.84		100.000		90.8	52 - 142			
Surrogate: Nitrobenzene-d5	78.03		100.000		78.0	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 : 08/23/2016

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 Limit	Notes

Batch B6H0327 - MSSEMI_ISOTOPEDILN_W

Blank (B6H0327-BLK1)

Prepared: 8/10/2016 Analyzed: 8/10/2016

1,4-Dioxane	ND	0.20			NR				
Surrogate: 1,2-Dichlorobenzene-d4	0.7158		1.00000		71.6	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.7249		1.00000		72.5	28 - 122			
Surrogate: 4-Terphenyl-d14	0.8320		1.00000		83.2	43 - 131			
Surrogate: Nitrobenzene-d5	0.8500		1.00000		85.0	20 - 119			

LCS (B6H0327-BS1)

Prepared: 8/10/2016 Analyzed: 8/10/2016

1,4-Dioxane	1.13084	0.20	1.00000		113	49 - 169			
Surrogate: 1,2-Dichlorobenzene-d4	0.7331		1.00000		73.3	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.7379		1.00000		73.8	28 - 122			
Surrogate: 4-Terphenyl-d14	0.8226		1.00000		82.3	43 - 131			
Surrogate: Nitrobenzene-d5	0.8785		1.00000		87.8	20 - 119			

Matrix Spike (B6H0327-MS1)

Source: 1602748-06

Prepared: 8/10/2016 Analyzed: 8/10/2016

1,4-Dioxane	1.29959	0.20	1.00000	ND	130	49 - 169			
Surrogate: 1,2-Dichlorobenzene-d4	0.7049		1.00000		70.5	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.7481		1.00000		74.8	28 - 122			
Surrogate: 4-Terphenyl-d14	0.8270		1.00000		82.7	43 - 131			
Surrogate: Nitrobenzene-d5	0.8450		1.00000		84.5	20 - 119			

Matrix Spike Dup (B6H0327-MSD1)

Source: 1602748-06

Prepared: 8/10/2016 Analyzed: 8/11/2016

1,4-Dioxane	1.32963	0.20	1.00000	ND	133	49 - 169	2.29	20	
Surrogate: 1,2-Dichlorobenzene-d4	0.6901		1.00000		69.0	31 - 106			
Surrogate: 2-Fluorobiphenyl	0.7150		1.00000		71.5	28 - 122			
Surrogate: 4-Terphenyl-d14	0.8149		1.00000		81.5	43 - 131			
Surrogate: Nitrobenzene-d5	0.8278		1.00000		82.8	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 : 08/23/2016

Notes and Definitions

M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

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

Bromate by EPA 317.0
Ion Chromatography 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#: 1602739-04 / POX	ND

Method Blank	ND

Detection Limit	0.5

Date Analyzed:	08-11-16

Quality Control Summary

Sample ID:	ATL Lab#: 1602739-04 / POX

<u>Analyte</u>	<u>Sample Result</u>	<u>Spike Conc</u>	<u>Spike Result</u>	<u>Spike % Rec</u>	<u>Spike Duplicate Result</u>	<u>Spike Duplicate % Rec</u>	<u>RPD</u>
Bromate	ND	20.0	19.6	98	19.6	98	0
QC Guidelines				75-125		75-125	NMT 10

ADVANCED TECHNOLOGY
LABORATORIES
SUBCONTRACT ORDER

Work Order: 1602739

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#: SC10620- STANDARD TAT

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

Analysis	Due	Expires	Matrix	Date Sampled
ATL Lab#: 1602739-04 / POX			Groundwater	08/04/16 08:00
317.0 SUB	08/18/16 17:00	08/05/16 08:00		
[Bromate]				
1-Poly Unpres - 125mL				
Comments:				

Released By

Date

Received By

Date

Released By

Date

Received By

Date



WORK ORDER NUMBER: 16-08-0565

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Advanced Technology Laboratories

Client Project Name: 1602739

Attention: Rachelle Arada
3275 Walnut Street
Signal Hill, CA 90755-5225

Nicole Scott

Approved for release on 08/16/2016 by:
Nicole Scott
Project Manager

ResultLink ▶

Email your PM ▶

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

Contents

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Work Order Number: 16-08-0565

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Work Order Narrative

Work Order: 16-08-0565

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Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 08/08/16. They were assigned to Work Order 16-08-0565.

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.

Analytical Report

Advanced Technology Laboratories
3275 Walnut Street
Signal Hill, CA 90755-5225

Date Received: 08/08/16
Work Order: 16-08-0565
Preparation: N/A
Method: SM 5310 B
Units: mg/L

Project: 1602739

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1602739-04 / POX	16-08-0565-1-A	08/04/16 08:00	Aqueous	TOC 11	08/10/16	08/10/16 03:50	G0810TOCL2

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Carbon, Total Organic	0.78	0.50	1.00	

1602739-05 / PF	16-08-0565-2-A	08/04/16 08:05	Aqueous	TOC 11	08/10/16	08/10/16 03:50	G0810TOCL2

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Carbon, Total Organic	1.0	0.50	1.00	

Method Blank	099-05-097-5869	N/A	Aqueous	TOC 11	08/10/16	08/10/16 03:50	G0810TOCL2

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Carbon, Total Organic	ND	0.50	1.00	



 Return to Contents

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



Calscience

Quality Control - Spike/Spike Duplicate

Advanced Technology Laboratories
3275 Walnut Street
Signal Hill, CA 90755-5225

Date Received: 08/08/16
Work Order: 16-08-0565
Preparation: N/A
Method: SM 5310 B

Project: 1602739

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
1602739-04 / POX	Sample	Aqueous	TOC 11	08/10/16	08/10/16 03:50	G0810TOCS2
1602739-04 / POX	Matrix Spike	Aqueous	TOC 11	08/10/16	08/10/16 03:50	G0810TOCS2
1602739-04 / POX	Matrix Spike Duplicate	Aqueous	TOC 11	08/10/16	08/10/16 03:50	G0810TOCS2

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	0.7800	10.00	10.77	100	10.08	93	31-145	7	0-23	

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RPD: Relative Percent Difference. CL: Control Limits

Quality Control - LCS/LCSD

Advanced Technology Laboratories
3275 Walnut Street
Signal Hill, CA 90755-5225

Date Received: 08/08/16
Work Order: 16-08-0565
Preparation: N/A
Method: SM 5310 B

Project: 1602739

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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-05-097-5869	LCS	Aqueous	TOC 11	08/10/16	08/10/16 03:50	G0810TOCL2			
099-05-097-5869	LCSD	Aqueous	TOC 11	08/10/16	08/10/16 03:50	G0810TOCL2			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	10.00	9.165	92	9.258	93	80-120	1	0-20	

Sample Analysis Summary Report

Work Order: 16-08-0565

Page 1 of 1

<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
SM 5310 B	N/A	735	TOC 11	1


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Glossary of Terms and Qualifiers

Work Order: 16-08-0565

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.

ADVANCED TECHNOLOGY
 LABORATORIES

SUBCONTRACT ORDER

Work Order: 1602739

16-08-0565

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:

Eurofins Calscience, Inc.
 7440 Lincoln Way
 Garden Grove, CA 92841-1427
 Phone : (714) 895-5494
 Fax: (714) 894-7501
 PO#: SC10626- STANDARD TAT *RA*

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

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1602739-04 / POX <i>(1)</i>		Groundwater	08/04/16 08:00	
415.1_5310B	08/22/16 17:00	09/01/16 08:00		
[Total Organic Carbon]				
3-Voa Vial - H2S04				
ATL Lab#: 1602739-05 / PF <i>(2)</i>		Groundwater	08/04/16 08:05	
415.1_5310B	08/22/16 17:00	09/01/16 08:05		
[Total Organic Carbon]				
3-Voa Vial - H2S04				

Return to Contents

Released By

Date

Received By

Date

Released By

Date

Received By

Date

SAMPLE RECEIPT CHECKLIST

COOLER / OF /

CLIENT: ATL

DATE: 08 / 8 / 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): 3.0 °C (w/ CF): 3.0 °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: SLC

CUSTODY SEAL:

Cooler ☐ Present and Intact

☐ Present but Not Intact

☒ Not Present

☐ N/A

Checked by: SLC

Sample(s) ☐ Present and Intact

☐ Present but Not Intact

☒ Not Present

☐ N/A

Checked by: SLC

SAMPLE CONDITION:

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

COC document(s) received complete ☒ Yes ☐ No ☐ N/A

☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers

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

Sampler's name indicated on COC ☐ Yes ☐ No ☒ N/A

Sample container label(s) consistent with COC ☒ Yes ☐ No ☐ N/A

Sample container(s) intact and in good condition ☒ Yes ☐ No ☐ N/A

Proper containers for analyses requested ☒ Yes ☐ No ☐ N/A

Sufficient volume/mass for analyses requested ☒ Yes ☐ No ☐ N/A

Samples received within holding time ☒ Yes ☐ No ☐ N/A

Aqueous samples for certain analyses received within 15-minute holding time

☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen ☐ Yes ☐ No ☒ N/A

Proper preservation chemical(s) noted on COC and/or sample container ☒ Yes ☐ No ☐ N/A

Unpreserved aqueous sample(s) received for certain analyses

☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals

Container(s) for certain analysis free of headspace ☐ Yes ☐ No ☒ N/A

☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)

☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)

Tedlar™ bag(s) free of condensation ☐ Yes ☐ No ☒ N/A

CONTAINER TYPE:

(Trip Blank Lot Number:)

Aqueous: ☒ VOA_s ☐ VOA_h ☐ VOA_{na}₂ ☐ 100PJ ☐ 100PJ_{na}₂ ☐ 125AGB ☐ 125AGB_h ☐ 125AGB_p ☐ 125PB

☐ 125PB_{znna} ☐ 250AGB ☐ 250CGB ☐ 250CGB_s ☐ 250PB ☐ 250PB_n ☐ 500AGB ☐ 500AGJ ☐ 500AGJ_s
☐ 500PB ☐ 1AGB ☐ 1AGB_{na}₂ ☐ 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: SLC

s = H₂SO₄, u = ultra-pure, znna = Zn (CH₃CO₂)₂ + NaOH

Reviewed by: SL



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:				SAMPLE COLLECTION																		REMARKS														
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		
1602739-1	TB-080416	8/4/16	7:00	X	X					X	2						X																			
-2	CEFF		7:50	X	X					X	3					1	X								X	X							X			
-3	CBT		7:55	X	X					X	3					1	X							X	X								X			
-4	POX		8:00	X	X			X	X	6	1	1			1	X	X		X	X				X	X								X			
-5	PF		8:05	X				X	X	3		1	1	1						X	X	X	X										X			
-6	INF		8:10	X	X				X	3	1				1	X	X						X			X							X			
-7	EW-02		8:50	X	X				X	3	1				1	X	X						X		X								X			
-8	MW-29		9:05	X	X				X	3	1				1	X	X						X		X								X			

Total number of containers per analysis:

26 4 2 1 1 6

Total No. of Containers: 40

Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<u>Kevin Fong H+H</u>	<u>8/4/16 11:50</u>	<u>Steve Netto ATL</u>	<u>8/4/16 11:50</u>
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
<u>Steve Netto ATL</u>	<u>8/4/16 1240</u>	<u>Fong H+H</u>	<u>8/4/16 1240</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.

1.1 Temperature on receipt



August 25, 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 : 1602893

Client Reference : Raytheon Main GETS Mid Month Sample, 532.15

Enclosed are the results for sample(s) received on August 18, 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,

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

Eddie Rodriguez
Laboratory Director

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



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-081816	1602893-01	Lab prepared water	8/18/16 7:00	8/18/16 10:36
CEFF	1602893-02	Groundwater	8/18/16 8:20	8/18/16 10:36
CBT	1602893-03	Groundwater	8/18/16 8:25	8/18/16 10:36
POX	1602893-04	Groundwater	8/18/16 8:30	8/18/16 10:36
INF	1602893-05	Groundwater	8/18/16 8:35	8/18/16 10:36
EW-02	1602893-06	Groundwater	8/18/16 9:03	8/18/16 10:36
MW-29	1602893-07	Groundwater	8/18/16 9:15	8/18/16 10:36



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID TB-081816

Lab ID: 1602893-01

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	B6H0754	08/24/2016	08/24/16 20:03	
1,1,1-Trichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,1,2-Trichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,1-Dichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,1-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,1-Dichloropropene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,2,3-Trichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,2-Dibromoethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,2-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,2-Dichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,2-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,3-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,3-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
1,4-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
2,2-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
2-Chlorotoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
4-Chlorotoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
4-Isopropyltoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Benzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Bromobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Bromodichloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Bromoform	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Bromomethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Carbon tetrachloride	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Chlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Chloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Chloroform	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Chloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Dibromochloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID TB-081816

Lab ID: 1602893-01

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	B6H0754	08/24/2016	08/24/16 20:03	
Dichlorodifluoromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Ethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Hexachlorobutadiene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Isopropylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
m,p-Xylene	ND	1.0	1	B6H0754	08/24/2016	08/24/16 20:03	
Methylene chloride	ND	1.0	1	B6H0754	08/24/2016	08/24/16 20:03	
n-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
n-Propylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Naphthalene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
o-Xylene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
sec-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Styrene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
tert-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Tetrachloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Toluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Trichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Trichlorofluoromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Vinyl chloride	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:03	
Surrogate: 1,2-Dichloroethane-d4	102 %	51 - 157		B6H0754	08/24/2016	08/24/16 20:03	
Surrogate: 4-Bromofluorobenzene	105 %	61 - 123		B6H0754	08/24/2016	08/24/16 20:03	
Surrogate: Dibromofluoromethane	102 %	57 - 147		B6H0754	08/24/2016	08/24/16 20:03	
Surrogate: Toluene-d8	103 %	61 - 119		B6H0754	08/24/2016	08/24/16 20:03	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID CEFF

Lab ID: 1602893-02

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	B6H0754	08/24/2016	08/24/16 20:49	
1,1,1-Trichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,1,2-Trichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,1-Dichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,1-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,1-Dichloropropene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,2,3-Trichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,2-Dibromoethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,2-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,2-Dichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,2-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,3-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,3-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
1,4-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
2,2-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
2-Chlorotoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
4-Chlorotoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
4-Isopropyltoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Benzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Bromobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Bromodichloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Bromoform	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Bromomethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Carbon tetrachloride	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Chlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Chloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Chloroform	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Chloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Dibromochloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID CEFF

Lab ID: 1602893-02

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	B6H0754	08/24/2016	08/24/16 20:49	
Dichlorodifluoromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Ethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Hexachlorobutadiene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Isopropylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
m,p-Xylene	ND	1.0	1	B6H0754	08/24/2016	08/24/16 20:49	
Methylene chloride	ND	1.0	1	B6H0754	08/24/2016	08/24/16 20:49	
n-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
n-Propylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Naphthalene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
o-Xylene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
sec-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Styrene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
tert-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Tetrachloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Toluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Trichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Trichlorofluoromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Vinyl chloride	ND	0.50	1	B6H0754	08/24/2016	08/24/16 20:49	
Surrogate: 1,2-Dichloroethane-d4	103 %	51 - 157		B6H0754	08/24/2016	08/24/16 20:49	
Surrogate: 4-Bromofluorobenzene	104 %	61 - 123		B6H0754	08/24/2016	08/24/16 20:49	
Surrogate: Dibromofluoromethane	104 %	57 - 147		B6H0754	08/24/2016	08/24/16 20:49	
Surrogate: Toluene-d8	103 %	61 - 119		B6H0754	08/24/2016	08/24/16 20:49	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID CEFF

Lab ID: 1602893-02

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	B6H0664	08/22/2016	08/23/16 17:57	
Surrogate: 1,2-Dichlorobenzene-d4	55.8 %	31 - 106		B6H0664	08/22/2016	08/23/16 17:57	
Surrogate: 2-Fluorobiphenyl	50.6 %	28 - 122		B6H0664	08/22/2016	08/23/16 17:57	
Surrogate: 4-Terphenyl-d14	73.0 %	43 - 131		B6H0664	08/22/2016	08/23/16 17:57	
Surrogate: Nitrobenzene-d5	51.1 %	20 - 119		B6H0664	08/22/2016	08/23/16 17:57	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID CBT

Lab ID: 1602893-03

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	B6H0754	08/24/2016	08/24/16 22:21	
1,1,1-Trichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,1,2-Trichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,1-Dichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,1-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,1-Dichloropropene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,2,3-Trichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,2-Dibromoethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,2-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,2-Dichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,2-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,3-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,3-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
1,4-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
2,2-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
2-Chlorotoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
4-Chlorotoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
4-Isopropyltoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Benzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Bromobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Bromodichloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Bromoform	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Bromomethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Carbon tetrachloride	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Chlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Chloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Chloroform	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Chloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Dibromochloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID CBT

Lab ID: 1602893-03

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	B6H0754	08/24/2016	08/24/16 22:21	
Dichlorodifluoromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Ethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Hexachlorobutadiene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Isopropylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
m,p-Xylene	ND	1.0	1	B6H0754	08/24/2016	08/24/16 22:21	
Methylene chloride	ND	1.0	1	B6H0754	08/24/2016	08/24/16 22:21	
n-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
n-Propylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Naphthalene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
o-Xylene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
sec-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Styrene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
tert-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Tetrachloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Toluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Trichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Trichlorofluoromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Vinyl chloride	ND	0.50	1	B6H0754	08/24/2016	08/24/16 22:21	
Surrogate: 1,2-Dichloroethane-d4	106 %	51 - 157		B6H0754	08/24/2016	08/24/16 22:21	
Surrogate: 4-Bromofluorobenzene	107 %	61 - 123		B6H0754	08/24/2016	08/24/16 22:21	
Surrogate: Dibromofluoromethane	107 %	57 - 147		B6H0754	08/24/2016	08/24/16 22:21	
Surrogate: Toluene-d8	106 %	61 - 119		B6H0754	08/24/2016	08/24/16 22:21	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID CBT

Lab ID: 1602893-03

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	B6H0664	08/22/2016	08/23/16 18:24	
Surrogate: 1,2-Dichlorobenzene-d4	62.3 %	31 - 106		B6H0664	08/22/2016	08/23/16 18:24	
Surrogate: 2-Fluorobiphenyl	58.7 %	28 - 122		B6H0664	08/22/2016	08/23/16 18:24	
Surrogate: 4-Terphenyl-d14	74.0 %	43 - 131		B6H0664	08/22/2016	08/23/16 18:24	
Surrogate: Nitrobenzene-d5	58.9 %	20 - 119		B6H0664	08/22/2016	08/23/16 18:24	



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Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID POX

Lab ID: 1602893-04

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	B6H0754	08/24/2016	08/24/16 21:12	
1,1,1-Trichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,1,2-Trichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,1-Dichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,1-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,1-Dichloropropene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,2,3-Trichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,2-Dibromoethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,2-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,2-Dichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,2-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,3-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,3-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
1,4-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
2,2-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
2-Chlorotoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
4-Chlorotoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
4-Isopropyltoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Benzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Bromobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Bromodichloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Bromoform	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Bromomethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Carbon tetrachloride	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Chlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Chloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Chloroform	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Chloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Dibromochloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID POX

Lab ID: 1602893-04

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	B6H0754	08/24/2016	08/24/16 21:12	
Dichlorodifluoromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Ethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Hexachlorobutadiene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Isopropylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
m,p-Xylene	ND	1.0	1	B6H0754	08/24/2016	08/24/16 21:12	
Methylene chloride	ND	1.0	1	B6H0754	08/24/2016	08/24/16 21:12	
n-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
n-Propylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Naphthalene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
o-Xylene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
sec-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Styrene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
tert-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Tetrachloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Toluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Trichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Trichlorofluoromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Vinyl chloride	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:12	
Surrogate: 1,2-Dichloroethane-d4	104 %	51 - 157		B6H0754	08/24/2016	08/24/16 21:12	
Surrogate: 4-Bromofluorobenzene	106 %	61 - 123		B6H0754	08/24/2016	08/24/16 21:12	
Surrogate: Dibromofluoromethane	104 %	57 - 147		B6H0754	08/24/2016	08/24/16 21:12	
Surrogate: Toluene-d8	104 %	61 - 119		B6H0754	08/24/2016	08/24/16 21:12	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID POX

Lab ID: 1602893-04

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	B6H0664	08/22/2016	08/23/16 18:52	
Surrogate: 1,2-Dichlorobenzene-d4	71.8 %	31 - 106		B6H0664	08/22/2016	08/23/16 18:52	
Surrogate: 2-Fluorobiphenyl	62.4 %	28 - 122		B6H0664	08/22/2016	08/23/16 18:52	
Surrogate: 4-Terphenyl-d14	79.4 %	43 - 131		B6H0664	08/22/2016	08/23/16 18:52	
Surrogate: Nitrobenzene-d5	67.5 %	20 - 119		B6H0664	08/22/2016	08/23/16 18:52	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID INF

Lab ID: 1602893-05

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	B6H0754	08/24/2016	08/24/16 21:35	
1,1,1-Trichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,1,2-Trichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,1-Dichloroethane	0.69	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,1-Dichloroethene	63	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,1-Dichloropropene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,2,3-Trichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,2-Dibromoethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,2-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,2-Dichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,2-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,3-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,3-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
1,4-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
2,2-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
2-Chlorotoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
4-Chlorotoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
4-Isopropyltoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Benzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Bromobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Bromodichloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Bromoform	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Bromomethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Carbon tetrachloride	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Chlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Chloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Chloroform	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Chloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Dibromochloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID INF

Lab ID: 1602893-05

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	B6H0754	08/24/2016	08/24/16 21:35	
Dichlorodifluoromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Ethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Hexachlorobutadiene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Isopropylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
m,p-Xylene	ND	1.0	1	B6H0754	08/24/2016	08/24/16 21:35	
Methylene chloride	ND	1.0	1	B6H0754	08/24/2016	08/24/16 21:35	
n-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
n-Propylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Naphthalene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
o-Xylene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
sec-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Styrene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
tert-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Tetrachloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Toluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Trichloroethene	0.58	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Trichlorofluoromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
Vinyl chloride	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:35	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>103 %</i>	<i>51 - 157</i>		B6H0754	08/24/2016	<i>08/24/16 21:35</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>103 %</i>	<i>61 - 123</i>		B6H0754	08/24/2016	<i>08/24/16 21:35</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>57 - 147</i>		B6H0754	08/24/2016	<i>08/24/16 21:35</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>61 - 119</i>		B6H0754	08/24/2016	<i>08/24/16 21:35</i>	



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San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID INF

Lab ID: 1602893-05

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	26	2.0	1	B6H0698	08/23/2016	08/23/16 19:28	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>58.2 %</i>	<i>42 - 106</i>		B6H0698	08/23/2016	<i>08/23/16 19:28</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>69.3 %</i>	<i>55 - 117</i>		B6H0698	08/23/2016	<i>08/23/16 19:28</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>89.9 %</i>	<i>52 - 142</i>		B6H0698	08/23/2016	<i>08/23/16 19:28</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>67.7 %</i>	<i>43 - 116</i>		B6H0698	08/23/2016	<i>08/23/16 19:28</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID EW-02

Lab ID: 1602893-06

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	B6H0754	08/24/2016	08/24/16 21:58	
1,1,1-Trichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,1,2-Trichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,1-Dichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,1-Dichloroethene	26	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,1-Dichloropropene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,2,3-Trichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,2-Dibromoethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,2-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,2-Dichloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,2-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,3-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,3-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
1,4-Dichlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
2,2-Dichloropropane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
2-Chlorotoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
4-Chlorotoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
4-Isopropyltoluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Benzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Bromobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Bromodichloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Bromoform	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Bromomethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Carbon tetrachloride	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Chlorobenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Chloroethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Chloroform	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Chloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Dibromochloromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID EW-02

Lab ID: 1602893-06

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	B6H0754	08/24/2016	08/24/16 21:58	
Dichlorodifluoromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Ethylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Hexachlorobutadiene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Isopropylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
m,p-Xylene	ND	1.0	1	B6H0754	08/24/2016	08/24/16 21:58	
Methylene chloride	ND	1.0	1	B6H0754	08/24/2016	08/24/16 21:58	
n-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
n-Propylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Naphthalene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
o-Xylene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
sec-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Styrene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
tert-Butylbenzene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Tetrachloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Toluene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Trichloroethene	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Trichlorofluoromethane	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Vinyl chloride	ND	0.50	1	B6H0754	08/24/2016	08/24/16 21:58	
Surrogate: 1,2-Dichloroethane-d4	105 %	51 - 157		B6H0754	08/24/2016	08/24/16 21:58	
Surrogate: 4-Bromofluorobenzene	108 %	61 - 123		B6H0754	08/24/2016	08/24/16 21:58	
Surrogate: Dibromofluoromethane	105 %	57 - 147		B6H0754	08/24/2016	08/24/16 21:58	
Surrogate: Toluene-d8	104 %	61 - 119		B6H0754	08/24/2016	08/24/16 21:58	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID EW-02

Lab ID: 1602893-06

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	9.6	2.0	1	B6H0698	08/23/2016	08/23/16 19:56	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>63.7 %</i>	<i>42 - 106</i>		<i>B6H0698</i>	<i>08/23/2016</i>	<i>08/23/16 19:56</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>73.0 %</i>	<i>55 - 117</i>		<i>B6H0698</i>	<i>08/23/2016</i>	<i>08/23/16 19:56</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>92.7 %</i>	<i>52 - 142</i>		<i>B6H0698</i>	<i>08/23/2016</i>	<i>08/23/16 19:56</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>72.5 %</i>	<i>43 - 116</i>		<i>B6H0698</i>	<i>08/23/2016</i>	<i>08/23/16 19:56</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID MW-29

Lab ID: 1602893-07

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	B6H0754	08/25/2016	08/25/16 00:40	
1,1,1-Trichloroethane	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,1,2-Trichloroethane	0.90	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,1-Dichloroethane	2.6	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,1-Dichloroethene	250	2.5	5	B6H0754	08/25/2016	08/25/16 01:03	
1,1-Dichloropropene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,2,3-Trichloropropane	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,2,3-Trichlorobenzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,2,4-Trichlorobenzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,2,4-Trimethylbenzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,2-Dibromoethane	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,2-Dichlorobenzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,2-Dichloroethane	0.51	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,2-Dichloropropane	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,3,5-Trimethylbenzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,3-Dichlorobenzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,3-Dichloropropane	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
1,4-Dichlorobenzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
2,2-Dichloropropane	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
2-Chlorotoluene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
4-Chlorotoluene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
4-Isopropyltoluene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Benzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Bromobenzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Bromodichloromethane	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Bromoform	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Bromomethane	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Carbon tetrachloride	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Chlorobenzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Chloroethane	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Chloroform	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Chloromethane	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
cis-1,2-Dichloroethene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
cis-1,3-Dichloropropene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Dibromochloromethane	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID MW-29

Lab ID: 1602893-07

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	B6H0754	08/25/2016	08/25/16 00:40	
Dichlorodifluoromethane	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Ethylbenzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Hexachlorobutadiene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Isopropylbenzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
m,p-Xylene	ND	1.0	1	B6H0754	08/25/2016	08/25/16 00:40	
Methylene chloride	ND	1.0	1	B6H0754	08/25/2016	08/25/16 00:40	
n-Butylbenzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
n-Propylbenzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Naphthalene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
o-Xylene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
sec-Butylbenzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Styrene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
tert-Butylbenzene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Tetrachloroethene	0.63	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Toluene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
trans-1,2-Dichloroethene	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Trichloroethene	2.5	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Trichlorofluoromethane	0.66	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
Vinyl chloride	ND	0.50	1	B6H0754	08/25/2016	08/25/16 00:40	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>105 %</i>	<i>51 - 157</i>		B6H0754	08/25/2016	<i>08/25/16 01:03</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>106 %</i>	<i>51 - 157</i>		B6H0754	08/25/2016	<i>08/25/16 00:40</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>106 %</i>	<i>61 - 123</i>		B6H0754	08/25/2016	<i>08/25/16 01:03</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>108 %</i>	<i>61 - 123</i>		B6H0754	08/25/2016	<i>08/25/16 00:40</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>	<i>57 - 147</i>		B6H0754	08/25/2016	<i>08/25/16 01:03</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>	<i>57 - 147</i>		B6H0754	08/25/2016	<i>08/25/16 00:40</i>	
<i>Surrogate: Toluene-d8</i>	<i>105 %</i>	<i>61 - 119</i>		B6H0754	08/25/2016	<i>08/25/16 00:40</i>	
<i>Surrogate: Toluene-d8</i>	<i>106 %</i>	<i>61 - 119</i>		B6H0754	08/25/2016	<i>08/25/16 01:03</i>	



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

Client Sample ID MW-29

Lab ID: 1602893-07

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	86	2.0	1	B6H0698	08/23/2016	08/23/16 20:24	
<i>Surrogate: 1,2-Dichlorobenzene-d4</i>	<i>68.5 %</i>	<i>42 - 106</i>		B6H0698	08/23/2016	<i>08/23/16 20:24</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>76.1 %</i>	<i>55 - 117</i>		B6H0698	08/23/2016	<i>08/23/16 20:24</i>	
<i>Surrogate: 4-Terphenyl-d14</i>	<i>94.3 %</i>	<i>52 - 142</i>		B6H0698	08/23/2016	<i>08/23/16 20:24</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>77.1 %</i>	<i>43 - 116</i>		B6H0698	08/23/2016	<i>08/23/16 20:24</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

Batch B6H0754 - MSVOA_W

Blank (B6H0754-BLK1)

Prepared: 8/24/2016 Analyzed: 8/24/2016

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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Project Number : Raytheon Main GETS Mid Month Sample

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Reported : 08/25/2016

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

Batch B6H0754 - MSVOA_W (continued)

Blank (B6H0754-BLK1) - Continued

Prepared: 8/24/2016 Analyzed: 8/24/2016

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				
Surrogate: 1,2-Dichloroethane-d4	25.03		25.0000		100	51 - 157			
Surrogate: 4-Bromofluorobenzene	26.18		25.0000		105	61 - 123			
Surrogate: Dibromofluoromethane	25.25		25.0000		101	57 - 147			
Surrogate: Toluene-d8	25.71		25.0000		103	61 - 119			

LCS (B6H0754-BS1)

Prepared: 8/24/2016 Analyzed: 8/24/2016

1,1,1,2-Tetrachloroethane	18.9300	0.50	20.0000		94.6	76 - 132			
1,1,1-Trichloroethane	18.2700	0.50	20.0000		91.4	72 - 144			
1,1,2,2-Tetrachloroethane	19.8500	0.50	20.0000		99.2	70 - 120			
1,1,2-Trichloroethane	17.4900	0.50	20.0000		87.4	75 - 120			
1,1-Dichloroethane	19.0700	0.50	20.0000		95.4	65 - 127			
1,1-Dichloroethene	17.6200	0.50	20.0000		88.1	63 - 142			
1,1-Dichloropropene	19.0400	0.50	20.0000		95.2	78 - 137			
1,2,3-Trichloropropane	19.8500	0.50	20.0000		99.2	73 - 118			
1,2,3-Trichlorobenzene	19.7800	0.50	20.0000		98.9	53 - 164			
1,2,4-Trichlorobenzene	18.2400	0.50	20.0000		91.2	58 - 144			
1,2,4-Trimethylbenzene	19.1000	0.50	20.0000		95.5	75 - 140			
1,2-Dibromo-3-chloropropane	19.4100	0.50	20.0000		97.0	61 - 131			
1,2-Dibromoethane	18.0600	0.50	20.0000		90.3	74 - 125			
1,2-Dichlorobenzene	20.0100	0.50	20.0000		100	78 - 122			
1,2-Dichloroethane	17.6700	0.50	20.0000		88.4	70 - 126			
1,2-Dichloropropane	17.8000	0.50	20.0000		89.0	69 - 120			
1,3,5-Trimethylbenzene	18.6100	0.50	20.0000		93.0	73 - 145			



Certificate of Analysis

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Project Number : Raytheon Main GETS Mid Month Sample

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Reported : 08/25/2016

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

Batch B6H0754 - MSVOA_W (continued)

LCS (B6H0754-BS1) - Continued

Prepared: 8/24/2016 Analyzed: 8/24/2016

1,3-Dichlorobenzene	19.7300	0.50	20.0000		98.6	76 - 126			
1,3-Dichloropropane	19.4400	0.50	20.0000		97.2	76 - 117			
1,4-Dichlorobenzene	19.8800	0.50	20.0000		99.4	77 - 120			
2,2-Dichloropropane	19.5900	0.50	20.0000		98.0	47 - 169			
2-Chlorotoluene	20.3400	0.50	20.0000		102	75 - 135			
4-Chlorotoluene	20.5000	0.50	20.0000		102	70 - 133			
4-Isopropyltoluene	19.3800	0.50	20.0000		96.9	72 - 153			
Benzene	36.1400	0.50	40.0000		90.4	73 - 123			
Bromobenzene	19.3800	0.50	20.0000		96.9	75 - 121			
Bromodichloromethane	17.2200	0.50	20.0000		86.1	73 - 124			
Bromoform	18.3100	0.50	20.0000		91.6	70 - 135			
Bromomethane	21.1800	0.50	20.0000		106	10 - 166			
Carbon tetrachloride	18.4300	0.50	20.0000		92.2	65 - 171			
Chlorobenzene	19.6800	0.50	20.0000		98.4	80 - 121			
Chloroethane	18.7900	0.50	20.0000		94.0	55 - 143			
Chloroform	17.7900	0.50	20.0000		89.0	65 - 130			
Chloromethane	16.8300	0.50	20.0000		84.2	21 - 141			
cis-1,2-Dichloroethene	18.1600	0.50	20.0000		90.8	64 - 126			
cis-1,3-Dichloropropene	19.7000	0.50	20.0000		98.5	70 - 131			
Dibromochloromethane	17.7600	0.50	20.0000		88.8	74 - 125			
Dibromomethane	18.1400	0.50	20.0000		90.7	74 - 116			
Dichlorodifluoromethane	17.9000	0.50	20.0000		89.5	40 - 186			
Ethylbenzene	40.2100	0.50	40.0000		101	77 - 130			
Hexachlorobutadiene	19.6900	0.50	20.0000		98.4	52 - 176			
Isopropylbenzene	19.6200	0.50	20.0000		98.1	77 - 144			
m,p-Xylene	40.9200	1.0	40.0000		102	84 - 136			
Methylene chloride	17.1400	1.0	20.0000		85.7	72 - 150			
n-Butylbenzene	19.4500	0.50	20.0000		97.2	73 - 154			
n-Propylbenzene	21.1700	0.50	20.0000		106	77 - 145			
Naphthalene	20.2200	0.50	20.0000		101	55 - 137			
o-Xylene	39.6100	0.50	40.0000		99.0	79 - 135			
sec-Butylbenzene	20.9700	0.50	20.0000		105	73 - 157			
Styrene	18.8600	0.50	20.0000		94.3	78 - 125			
tert-Butylbenzene	19.2500	0.50	20.0000		96.2	78 - 149			
Tetrachloroethene	17.7400	0.50	20.0000		88.7	74 - 136			
Toluene	36.1000	0.50	40.0000		90.2	78 - 124			
trans-1,2-Dichloroethene	17.7400	0.50	20.0000		88.7	66 - 131			
Trichloroethene	17.8100	0.50	20.0000		89.0	78 - 128			
Trichlorofluoromethane	17.6100	0.50	20.0000		88.0	60 - 170			
Vinyl chloride	18.2000	0.50	20.0000		91.0	55 - 148			

Surrogate: 1,2-Dichloroethane-d4	25.43		25.0000		102	51 - 157			



Certificate of Analysis

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San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

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

Batch B6H0754 - MSVOA_W (continued)

LCS (B6H0754-BS1) - Continued

Prepared: 8/24/2016 Analyzed: 8/24/2016

Surrogate: 4-Bromofluorobenzene	26.08		25.0000		104	61 - 123			
Surrogate: Dibromofluoromethane	25.37		25.0000		101	57 - 147			
Surrogate: Toluene-d8	26.43		25.0000		106	61 - 119			

LCS Dup (B6H0754-BSD1)

Prepared: 8/24/2016 Analyzed: 8/24/2016

1,1,1,2-Tetrachloroethane	17.9200	0.50	20.0000		89.6	76 - 132	5.48	20	
1,1,1-Trichloroethane	17.2800	0.50	20.0000		86.4	72 - 144	5.57	20	
1,1,2,2-Tetrachloroethane	17.3200	0.50	20.0000		86.6	70 - 120	13.6	20	
1,1,2-Trichloroethane	15.8300	0.50	20.0000		79.2	75 - 120	9.96	20	
1,1-Dichloroethane	18.2100	0.50	20.0000		91.0	65 - 127	4.61	20	
1,1-Dichloroethene	17.5700	0.50	20.0000		87.8	63 - 142	0.284	20	
1,1-Dichloropropene	18.2600	0.50	20.0000		91.3	78 - 137	4.18	20	
1,2,3-Trichloropropane	17.2500	0.50	20.0000		86.2	73 - 118	14.0	20	
1,2,3-Trichlorobenzene	18.3100	0.50	20.0000		91.6	53 - 164	7.72	20	
1,2,4-Trichlorobenzene	17.4000	0.50	20.0000		87.0	58 - 144	4.71	20	
1,2,4-Trimethylbenzene	18.3200	0.50	20.0000		91.6	75 - 140	4.17	20	
1,2-Dibromo-3-chloropropane	16.0800	0.50	20.0000		80.4	61 - 131	18.8	20	
1,2-Dibromoethane	16.1400	0.50	20.0000		80.7	74 - 125	11.2	20	
1,2-Dichlorobenzene	18.6300	0.50	20.0000		93.2	78 - 122	7.14	20	
1,2-Dichloroethane	16.2200	0.50	20.0000		81.1	70 - 126	8.56	20	
1,2-Dichloropropane	16.8000	0.50	20.0000		84.0	69 - 120	5.78	20	
1,3,5-Trimethylbenzene	17.9500	0.50	20.0000		89.8	73 - 145	3.61	20	
1,3-Dichlorobenzene	18.8800	0.50	20.0000		94.4	76 - 126	4.40	20	
1,3-Dichloropropane	17.5900	0.50	20.0000		88.0	76 - 117	9.99	20	
1,4-Dichlorobenzene	18.9100	0.50	20.0000		94.6	77 - 120	5.00	20	
2,2-Dichloropropane	18.6600	0.50	20.0000		93.3	47 - 169	4.86	20	
2-Chlorotoluene	19.3700	0.50	20.0000		96.8	75 - 135	4.89	20	
4-Chlorotoluene	19.5100	0.50	20.0000		97.6	70 - 133	4.95	20	
4-Isopropyltoluene	18.6600	0.50	20.0000		93.3	72 - 153	3.79	20	
Benzene	34.4400	0.50	40.0000		86.1	73 - 123	4.82	20	
Bromobenzene	18.4000	0.50	20.0000		92.0	75 - 121	5.19	20	
Bromodichloromethane	16.3100	0.50	20.0000		81.6	73 - 124	5.43	20	
Bromoform	16.2600	0.50	20.0000		81.3	70 - 135	11.9	20	
Bromomethane	19.9100	0.50	20.0000		99.6	10 - 166	6.18	20	
Carbon tetrachloride	17.7600	0.50	20.0000		88.8	65 - 171	3.70	20	
Chlorobenzene	18.8500	0.50	20.0000		94.2	80 - 121	4.31	20	
Chloroethane	19.2300	0.50	20.0000		96.2	55 - 143	2.31	20	
Chloroform	16.8300	0.50	20.0000		84.2	65 - 130	5.55	20	
Chloromethane	16.1300	0.50	20.0000		80.6	21 - 141	4.25	20	
cis-1,2-Dichloroethene	17.3900	0.50	20.0000		87.0	64 - 126	4.33	20	
cis-1,3-Dichloropropene	18.1700	0.50	20.0000		90.8	70 - 131	8.08	20	
Dibromochloromethane	16.3500	0.50	20.0000		81.8	74 - 125	8.27	20	



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Reported : 08/25/2016

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

Batch B6H0754 - MSVOA_W (continued)

LCS Dup (B6H0754-BSD1) - Continued

Prepared: 8/24/2016 Analyzed: 8/24/2016

Dibromomethane	16.5200	0.50	20.0000		82.6	74 - 116	9.35	20	
Dichlorodifluoromethane	17.3900	0.50	20.0000		87.0	40 - 186	2.89	20	
Ethylbenzene	38.4000	0.50	40.0000		96.0	77 - 130	4.61	20	
Hexachlorobutadiene	18.9300	0.50	20.0000		94.6	52 - 176	3.94	20	
Isopropylbenzene	18.9500	0.50	20.0000		94.8	77 - 144	3.47	20	
m,p-Xylene	39.4600	1.0	40.0000		98.6	84 - 136	3.63	20	
Methylene chloride	16.4200	1.0	20.0000		82.1	72 - 150	4.29	20	
n-Butylbenzene	18.6700	0.50	20.0000		93.4	73 - 154	4.09	20	
n-Propylbenzene	20.2200	0.50	20.0000		101	77 - 145	4.59	20	
Naphthalene	17.6600	0.50	20.0000		88.3	55 - 137	13.5	20	
o-Xylene	37.8700	0.50	40.0000		94.7	79 - 135	4.49	20	
sec-Butylbenzene	20.0900	0.50	20.0000		100	73 - 157	4.29	20	
Styrene	18.0200	0.50	20.0000		90.1	78 - 125	4.56	20	
tert-Butylbenzene	18.5700	0.50	20.0000		92.8	78 - 149	3.60	20	
Tetrachloroethene	17.6800	0.50	20.0000		88.4	74 - 136	0.339	20	
Toluene	34.1200	0.50	40.0000		85.3	78 - 124	5.64	20	
trans-1,2-Dichloroethene	17.2100	0.50	20.0000		86.0	66 - 131	3.03	20	
Trichloroethene	16.9300	0.50	20.0000		84.6	78 - 128	5.07	20	
Trichlorofluoromethane	17.5000	0.50	20.0000		87.5	60 - 170	0.627	20	
Vinyl chloride	17.6700	0.50	20.0000		88.4	55 - 148	2.96	20	
Surrogate: 1,2-Dichloroethane-d4	24.39		25.0000		97.6	51 - 157			
Surrogate: 4-Bromofluorobenzene	25.93		25.0000		104	61 - 123			
Surrogate: Dibromofluoromethane	25.11		25.0000		100	57 - 147			
Surrogate: Toluene-d8	25.79		25.0000		103	61 - 119			



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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 Limits	RPD	RPD Limit	Notes

Batch B6H0698 - MSSEMI_W

Blank (B6H0698-BLK1)

Prepared: 8/23/2016 Analyzed: 8/23/2016

1,4-Dioxane	ND	2.0			NR				
Surrogate: 1,2-Dichlorobenzene-d4	52.99		100.000		53.0	42 - 106			
Surrogate: 2-Fluorobiphenyl	63.75		100.000		63.8	55 - 117			
Surrogate: 4-Terphenyl-d14	85.78		100.000		85.8	52 - 142			
Surrogate: Nitrobenzene-d5	60.16		100.000		60.2	43 - 116			

LCS (B6H0698-BS1)

Prepared: 8/23/2016 Analyzed: 8/23/2016

1,4-Dioxane	104.410	2.0	100.000		104	62 - 127			
Surrogate: 1,2-Dichlorobenzene-d4	62.33		100.000		62.3	42 - 106			
Surrogate: 2-Fluorobiphenyl	75.61		100.000		75.6	55 - 117			
Surrogate: 4-Terphenyl-d14	87.46		100.000		87.5	52 - 142			
Surrogate: Nitrobenzene-d5	70.38		100.000		70.4	43 - 116			

LCS Dup (B6H0698-BS1)

Prepared: 8/23/2016 Analyzed: 8/23/2016

1,4-Dioxane	102.680	2.0	100.000		103	62 - 127	1.67	20	
Surrogate: 1,2-Dichlorobenzene-d4	62.59		100.000		62.6	42 - 106			
Surrogate: 2-Fluorobiphenyl	79.76		100.000		79.8	55 - 117			
Surrogate: 4-Terphenyl-d14	96.87		100.000		96.9	52 - 142			
Surrogate: Nitrobenzene-d5	74.19		100.000		74.2	43 - 116			



Certificate of Analysis

Hargis & Associates, Inc.

9171 Towne Centre Drive, Suite 375

San Diego , CA 92122

Project Number : Raytheon Main GETS Mid Month Sample

Report To : Steve Netto

Reported : 08/25/2016

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

Batch B6H0664 - MSSEMI_ISOTOPEDILN_W

Blank (B6H0664-BLK1)

Prepared: 8/22/2016 Analyzed: 8/23/2016

1,4-Dioxane	ND	0.20		NR					
Surrogate: 1,2-Dichlorobenzene-d4	0.6135		1.00000	61.4	31 - 106				
Surrogate: 2-Fluorobiphenyl	0.5437		1.00000	54.4	28 - 122				
Surrogate: 4-Terphenyl-d14	0.8098		1.00000	81.0	43 - 131				
Surrogate: Nitrobenzene-d5	0.5715		1.00000	57.1	20 - 119				

LCS (B6H0664-BS1)

Prepared: 8/22/2016 Analyzed: 8/23/2016

1,4-Dioxane	1.36653	0.20	1.00000	137	49 - 169				
Surrogate: 1,2-Dichlorobenzene-d4	0.7413		1.00000	74.1	31 - 106				
Surrogate: 2-Fluorobiphenyl	0.7349		1.00000	73.5	28 - 122				
Surrogate: 4-Terphenyl-d14	0.8567		1.00000	85.7	43 - 131				
Surrogate: Nitrobenzene-d5	0.2772		1.00000	27.7	20 - 119				

LCS Dup (B6H0664-BS1)

Prepared: 8/22/2016 Analyzed: 8/23/2016

1,4-Dioxane	1.29349	0.20	1.00000	129	49 - 169	5.49	20		
Surrogate: 1,2-Dichlorobenzene-d4	0.6610		1.00000	66.1	31 - 106				
Surrogate: 2-Fluorobiphenyl	0.5584		1.00000	55.8	28 - 122				
Surrogate: 4-Terphenyl-d14	0.7302		1.00000	73.0	43 - 131				
Surrogate: Nitrobenzene-d5	0.4945		1.00000	49.4	20 - 119				



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Notes and Definitions

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

Notes:

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

Date: 8/18/16
Page 1 of 1

PROJECT: Raytheon Main GETS Mid Month 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		MATRIX		PRESERVATION		CONTAINERS				ANALYSIS REQUESTED										Expected Concentration Range (ppb) for VOA's				SPECIAL HANDLING				Laboratory							
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	REMARKS				
1602893 -1	TB-081816	8/18/2016	7:00		X	X				X	2						X																						
-2	CEFF		8:20	X	X					X	3					1	X								X	X													
-3	CBT		8:25	X	X					X	3					1	X							X	X														
-4	POX		8:30	X	X					X	3					1	X							X	X														
-5	INF		8:35	X	X					X	3					1	X							X															
-6	EW-02		9:03	X	X					X	3					1	X							X			X												
-7	MW-29		9:15	X	X					X	3					1	X							X			X												
Total number of containers per analysis:											20												6	Total No. of Containers: 26															

Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
Kevin Fong H+A	8/18/16 10:36	Steve Netto H+A	8/18/16 10:30
Relinquished By: / Company:	Date / Time	Received By: / Company	Date / Time
Steve Netto H+A	8/18/16 11:50	Kevin Fong H+A	8/18/16 11:50

- ☒ 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: 2.2 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 ✗
 Note applicable preservatives, special instructions, and deviations from typical environmental samples.
 Consult project QA documents for specific instructions.