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## COMPLIANCE GROUNDWATER MONITORING REPORT

**90 Bay Spring Avenue**  
**Map 2/Lot 154**  
**Barrington, Rhode Island**  
**RIDEM File No. SR-01-0106**

### Prepared for:

Bay Spring Realty Company  
909 North Main Street  
Providence, Rhode Island 02904

### Prepared by:

Resource Controls,  
a division of Environmental Strategies &  
Management, Inc.

474 Broadway  
Pawtucket, Rhode Island 02860

Pawtucket, RI • Norton, MA • Fall River, MA

**April 5, 2016**

April 5, 2016

Mr. Nicholas Noons, Sanitary Engineer  
RI Department of Environmental Management  
Office of Waste Management  
235 Promenade Street  
Providence, RI 02908-5767

**SUBJECT: Compliance Groundwater Monitoring report**  
Bay Spring Realty Company  
90 Bay Spring Avenue (Map 2/Lot 154)  
Barrington, Rhode Island  
RIDEM File No. SR-01-0106

Dear Mr. Noons:

On behalf of Bay Spring Realty Company, Resource Controls, a division of Environmental Strategies & Management, Inc. (Resource Controls) has prepared this Compliance Groundwater Monitoring Report for the property located at 90 Bay Spring Avenue, Barrington, Rhode Island (the Site) – RIDEM File No. SR-01-0106 (Former Case No. 2013-024). A Locus Map showing the location of the Site relative to regional geographic features is included as Attachment A, and a Site Plan including sample locations and relevant historic and current Site features is attached as Attachment B.

## FIELD ACTIVITIES

On March 29, 2016, groundwater was gauged to the nearest 0.01 foot using an electronic interface probe in monitoring wells MW-3, MW-5, MW-104, MW-105 and MW-106; and groundwater samples were collected from monitoring wells MW-3, MW-5, and MW-105. No light non-aqueous phase liquid (LNAPL) was detected. Fluid level measurements are summarized on the well monitoring form included in Attachment C. The inferred direction of groundwater flow is to the south/southeast (water table elevation contours modeled from the March 29, 2016 gauging event are included on the Site Plan – Figure 2/Attachment B). Groundwater samples were collected by low flow sampling methodology. The samples were collected in clean, preserved glassware, labeled in the field, placed on ice and submitted under standard chain-of custody protocol to ESS Laboratory (ESS) of Cranston, Rhode Island. The samples were analyzed for VOCs.

## ANALYTICAL RESULTS

Laboratory analysis of groundwater samples collected from MW-3, MW-5 and MW-105 indicated concentrations of VOC compounds above the laboratory reporting limits but below the RIDEM GA Groundwater Objectives. Trichloroethene was detected in MW-105 below the applicable RIDEM GA Groundwater Objectives. Since the RIDEM does not have promulgated groundwater standards intended to be protective of surface water, Resource Controls compared the TCE concentration to the Massachusetts Contingency Plan (MCP) Method 1 GW-3 Groundwater Standards (TCE – 5,000 ug/l). TCE concentrations at the Site in groundwater were reported below these standards.

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The groundwater analytical results are summarized in Table 1 included as Attachment D, and a copy of the laboratory report is included in Attachment E.

Laboratory analytical results indicate that concentrations of contaminants detected in groundwater from each well are similar to the previous sampling event conducted in December of 2015, with the exception of an increase in 1,1,1-trichloroethane concentrations in MW-3. The level of 1,1,1-trichloroethane detected is still below RIDEM GA Groundwater Objectives.

## CONCLUSIONS & RECOMMENDATIONS

Based on the results of the March 29, 2016 groundwater gauging and sampling efforts, Resource Controls offers the following conclusions:

- Groundwater laboratory analytical results for the groundwater sampling event indicated the following:
  - Trichloroethene was detected in MW-105 below the RIDEM GA Groundwater Objectives, and below the MCP GW-3 Groundwater Standards (intended to be protective of surface water bodies).
  - Other VOC's detected in MW-3, MW-5 and MW-105 were detected above laboratory reporting limits, but below applicable RIDEM GA Groundwater Objectives.

Resource Controls does not suggest a change to the previously recommended remedial alternative – the implementation of engineering and institutional controls as a cost-effective remedial alternative that is in compliance with the intent of the RIDEM Remediation Regulations, is consistent with current and future land use, and manages actual and potential risks to human health and the environment. The institutional controls shall prohibit the construction of any buildings within the waterfront areas of the Site (75-foot CRMC Setback) in which residual VOC contamination has been identified in groundwater (the area of the former cistern and downgradient, and the area of MW-104 and MW-3 and downgradient), unless the proposed development/construction includes a RIDEM approved vapor intrusion mitigation technology (e.g. sub-slab depressurization system, vapor barriers, etc.).

Compliance groundwater monitoring for VOCs has been conducted in December 2015 and March 2016. In accordance with the RIDEM Program Letter dated February 4, 2016, an additional round of groundwater monitoring shall be conducted in June 2016.

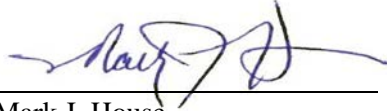
## LIMITATIONS

This report is not intended to guarantee that the Subject Property is or is not free from conditions, materials or substances that could adversely impact the environment or pose a threat to public health and safety. Rather, it is intended to be used as a summary of available information on existing conditions, the conclusions of which are based upon a reasonable review of information found in accordance with normally accepted industry standards and protocols, subject to and as limited by the scope and budget established with the client. Should further research on the Subject Property be warranted, Resource Controls must review any additional data obtained and the conclusions presented herein may be modified accordingly. Conclusions stated herein are based on the available information summarized herein and refer only to the specific Subject Property investigated. No warranty is implied or given and the report is subject to the agreement for the work, including the Standard Terms and Conditions attached to said agreement.

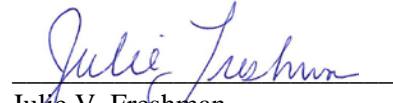
Please do not hesitate to contact the undersigned if additional information is needed.

Very truly yours,

**RESOURCE CONTROLS, a division of Environmental Strategies & Management, Inc.**



Mark J. House  
Vice President and Senior Scientist



Julie V. Freshman  
Senior Environmental Scientist

Attachments:            Attachment A    Locus Map  
                                 Attachment B    Site Plan  
                                 Attachment C    Well Monitoring Form  
                                 Attachment D    Tables  
                                 Attachment E    Laboratory Report  
                                 Attachment F    Additional Limitations

cc:      Bay Spring Realty Company

**ATTACHMENT A**

**Locus Map**



Source: Rhode Island Geographic Information System (RIGIS)  
 1955 (Photorevised 1970 and 1975) USGS Topographic Map - Bristol, Rhode Island-Massachusetts Quad

**LOCUS MAP**

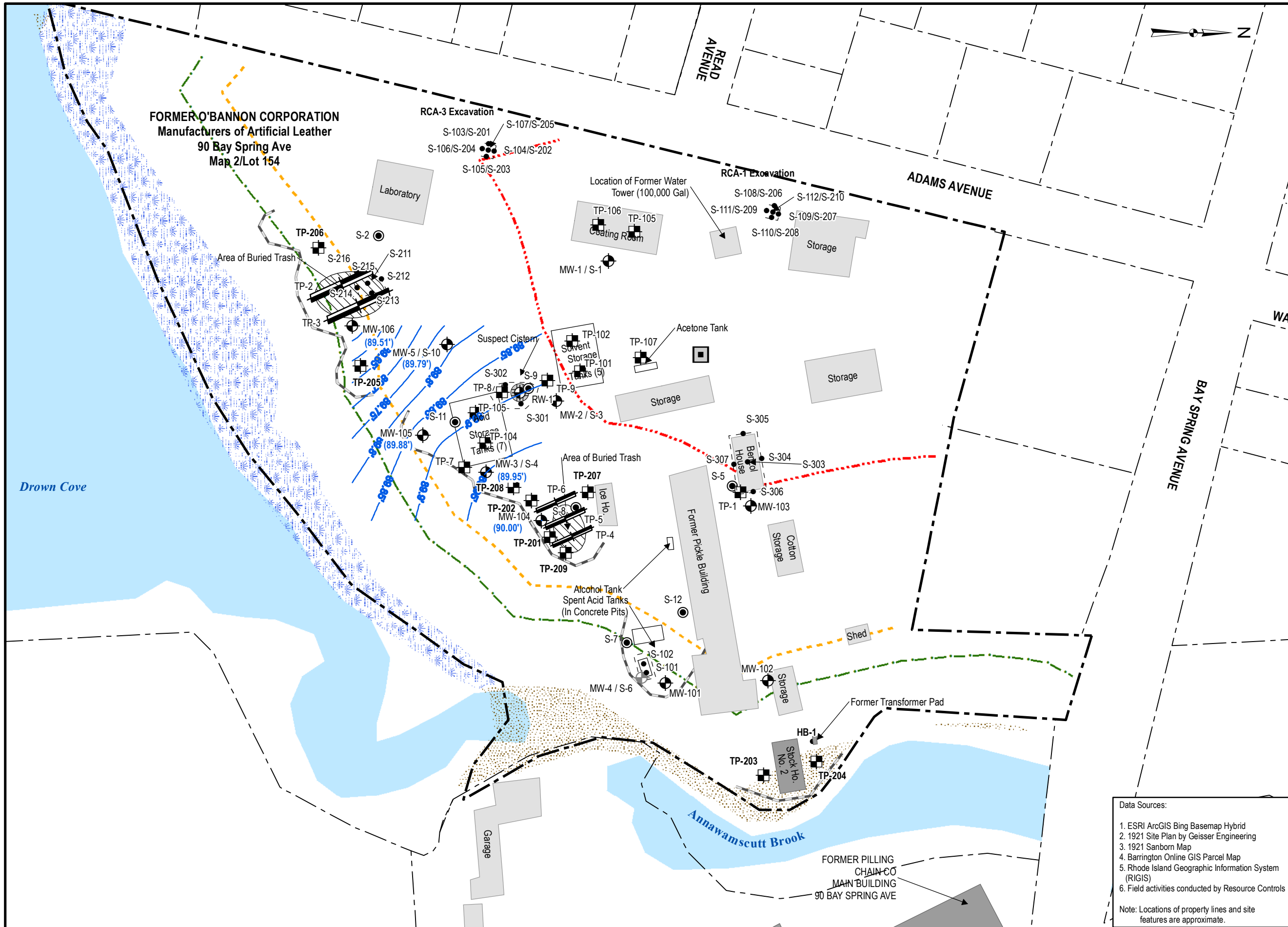
**90 BAY SPRING AVENUE  
 BARRINGTON, RHODE ISLAND**



DRAWN BY	PROJECT	PRINT DATE	FIGURE
EFG	7131A	04/18/2014	1

**ATTACHMENT B**

**Site Plan**



**LEGEND**

- Property Line
- Existing Building
- Former Building
- Former Tank(s)
- Beach
- Salt Marsh
- Water Body
- Extent of Excavation
- Approximate 50 ft Vegetated Buffer
- Approximate 75 ft CRMC Setback
- Approximate 200 ft CRMC Jurisdiction
- Water Table Elevation Contour (ft)
- (89.95') Water Table Elevation (ft)
- Hydrant
- Existing Monitoring Well
- Former Monitoring Well
- Test Pit
- Soil Sample

0 17.5 35 70 Feet  
Approximate Scale: 1 inch = 70 feet

PREPARED BY:  
**Resource Controls**  
 Engineering & Environmental Solutions  
 a division of Environmental Strategies & Management, Inc.

DRAWING DESCRIPTION:  
**SITE PLAN**

CLIENT:  
**Bay Spring Realty Co.**

LOCATION:  
**90 BAY SPRING AVENUE  
 BARRINGTON, RHODE ISLAND**

DESIGNED BY: NRH	CHECKED BY: JVJ	APPROVED BY: MJH
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DRAWING DATE: 05/03/2016	SHEET NUMBER: 1 of 1
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PROJECT NUMBER: 7131A	DRAWING NAME: SITE PLAN
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Data Sources:

- ESRI ArcGIS Bing Basemap Hybrid
- 1921 Site Plan by Geisser Engineering
- 1921 Sanborn Map
- Barrington Online GIS Parcel Map
- Rhode Island Geographic Information System (RIGIS)
- Field activities conducted by Resource Controls

Note: Locations of property lines and site features are approximate.

**FIGURE 2**



**ATTACHMENT C**

**Well Monitoring Form**

## WELL MONITORING FORM

Project: Bay Spring, Barrington  
 Project No.: 7131A  
 Location: 90 Bay Spring Avenue  
 Date: 03/29/16  
 Operator: BPC  
 Method: Interface Probe

Well ID	Top of Casing Elevation (feet)	Depth to LNAPL (feet)	Depth to Water (feet)	Depth to Bottom (feet)	LNAPL Thickness (feet)	LNAPL Specific Gravity (unitless)	Water Equivalent (feet)	Corrected Depth to Water (feet)	Corrected Water Table Elevation (feet)
MW-1	101.78	ND	NM	NM	ND	NA	NA	NA	NA
MW-2	101.97	ND	NM	NM	ND	NA	NA	NA	NA
MW-3	95.66	ND	5.71	13.13	ND	NA	NA	NA	89.95
MW-5	98.61	ND	8.82	14.30	ND	NA	NA	NA	89.79
MW-101	96.29	ND	NM	NM	ND	NA	NA	NA	NA
MW-102	97.05	ND	NM	NM	ND	NA	NA	NA	NA
MW-103	100.98	ND	NM	NM	ND	NA	NA	NA	NA
MW-104	96.20	ND	6.20	NM	ND	NA	NA	NA	90.00
MW-105	97.18	ND	7.30	12.99	ND	NA	NA	NA	89.88
MW-106	97.50	ND	7.99	NM	ND	NA	NA	NA	89.51

*NM = Not Measured; ND = None Detected at >0.01 feet; NA = Not Applicable; DRY = No Water in Well*

NOTES:

## **ATTACHMENT D**

### **Tables**



TABLE 1  
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

BAY SPRING REALTY CO.  
90 BAY SPRING AVENUE  
BARRINGTON, RHODE ISLAND

Sample Identifier Date Sampled	AOC-6: Drum Storage Area/Benzol House		AOC-7: Waste Disposal Area No. 2				AOC-8: Acid Storage Tanks						AOC-9: Solvent Storage Tanks		AOC-10: Coating Room		RIDEM Groundwater Objectives					
	MW-103		MW-104				MW-3						MW-2		MW-1		GA Objectives	GB UCLs				
	6/6/2014	12/17/2015	6/6/2014	10/9/2014	4/9/2015	7/9/2015	12/17/2015	11/26/2012	2/13/2013	6/6/2014	10/9/2014	4/9/2015	7/9/2015	12/17/2015	3/29/2016	11/26/2012	6/6/2014	11/26/2012	6/6/2014			
<b>VOLATILE ORGANIC COMPOUNDS (ug/L)</b>																						
1,1,1-Trichloroethane	--	<1.0	2.7	--	--	2.7	24.1	1.2	--	<1.0	2.1	<1.0	2.1	5.5	11	<0.1	<1.0	<1.0	--	200	68,000	
1,1,2-Trichloroethane	--	<1.0	<1.0	--	--	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	5	NS	
1,1,2-Trichloro-1,2,2-hydrofluoroethane	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
1,1-Dichloroethane	--	<1.0	1.2	--	--	4.0	9.8	3.0	--	<1.0	1.8	<1.0	<1.0	6.0	4.3	<0.1	<1.0	<1.0	--	NS	NS	
1,1-Dichloroethene	--	<1.0	<1.0	--	--	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	1.7	1.4	<1.0	<0.1	<1.0	<1.0	--	7	23,000	
1,2,4-Trimethylbenzene	--	<1.0	62.7	--	--	48.4	3.7	1.0	--	4.1	<1.0	<1.0	2.3	<1.0	<1.0	<0.1	<1.0	<1.0	--	NS	NS	
1,2-Dibromo-3-Chloropropane	--	<5.0	<5.0	--	--	<5.0	<5.0	<5.0	--	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.5	<5.0	<5.0	--	0.2	NS	
1,2-Dibromoethane (EDB)	--	<1.0	<1.0	--	--	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	0.05	NS	
1,2-Dichloroethane	--	<1.0	285	--	--	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	5	670,000	
1,3,5-Trimethylbenzene	--	<1.0	2.85	--	--	84.6	12.2	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	NS	NS	
2-Butanone	--	<1.0	<1.0	--	--	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	NS	NS	
2-Hexanone	--	<1.0	<1.0	--	--	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	NS	NS	
4-Isopropyltoluene	--	<1.0	8.0	--	--	5.2	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	NS	NS	
4-Methyl-2-Pentanone	--	<25	<25	--	--	<25	<25	<25	--	<25	<25	<25	<25	<25	<25	<2.5	<25	<25	--	NS	NS	
Acetone	--	<10	<10	--	--	<10	<10	102	--	<10	<10	<10	<10	<10	<10	10.4	<10	<10	--	5	18,000	
Benzene	--	<1.0	<1.0	--	--	<1.0	<1.0	1.1	--	3.4	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	5	NS	
Carbon Disulfide	--	<1.0	<1.0	--	--	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	NS	NS	
Carbon Tetrachloride	--	<1.0	<1.0	--	--	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	5	NS	
Chloroethane	--	<2.0	<2.0	--	--	<2.0	<2.0	<2.0	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.2	<2.0	<2.0	--	NS	NS	
Chloroform	--	<1.0	<1.0	--	--	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	NS	NS	
cis-1,2-Dichloroethene	--	<1.0	<1.0	--	--	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	70	69,000	
Ethylbenzene	--	<1.0	4.4	--	--	6.0	1.4	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	700	16,000	
Isopropylbenzene	--	<1.0	3.4	--	--	3.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	NS	NS	
Methylene Chloride	--	<2.0	<2.0	--	--	<2.0	<2.0	<2.0	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.2	<2.0	<2.0	--	5	NS	
Naphthalene	--	<1.0	2.6	--	--	2.4	<1.0	<1.0	--	1.6	<1.0	<1.0	1.3	<1.0	<1.0	<0.1	<1.0	<1.0	--	100	NS	
n-Propylbenzene	--	<1.0	3.2	--	--	2.3	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	NS	NS	
sec-Butylbenzene	--	<1.0	1.8	--	--	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	NS	NS	
Tetrachloroethene	--	<1.0	<1.0	--	--	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	5	NS	
Toluene	--	<1.0	<1.0	--	--	1.3	<1.0	1.1	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	1,000	21,000	
Trichloroethene	--	<1.0	<1.0	--	--	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	5	87,000	
Vinyl Chloride	--	<1.0	<1.0	--	--	<1.0	<1.0	<1.0	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1.0	<1.0	--	2	NS	
Xylene O	--	<1.0	5.2	--	--	5.9	<1.0	2.2	--	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	<1.0	<1.0	--	10,000	NS	
Xylene P,M	--	<2.0	27.9	--	--	27.6	<2.0	3.6	--	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<0.2	<2.0	<2.0	--	10,000	NS	
Xylenes (Total)	--	<3.0	33	--	--	33.5	<3.0	5.8	--	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<0.3	<3.0	<3.0	--	NS	NS	
All other VOCs	--	ND	ND	--	--	ND	ND	ND	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	--	NS	NS
<b>SEMI-VOLATILE ORGANIC COMPOUNDS (ug/L)</b>																						
2,4-Dimethylphenol	--	--	--	--	--	--	--	<51	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
2-Methylphenol	--	--	--	--	--	--	--	<10	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Acetophenone	--	--	--	--	--	--	--	<10	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Benzaldehyde	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Di-n-butylphthalate	--	--	--	--	--	--	--	<10	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Isophorone	--	--	--	--	--	--	--	<10	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Nitrobenzene	--	--	--	--	--	--	--	<10	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Phenol	--	--	--	--	--	--	--	<10	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
2-Methylnaphthalene	--	--	--	--	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Acenaphthene	--	--	--	--	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Acenaphthylene	--	--	--	--	--	--	--	0.3	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Benzo(a)anthracene	--	--	--	--	--	--	--	<0.05	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Benzo(a)pyrene	--	--	--	--	--	--	--	0.08	--	--	--	--	--	--	--	--	--	--	--	0.2	NS	
Benzo(b)fluoranthene	--	--	--	--	--	--	--	0.15	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Benzo(k)fluoranthene	--	--	--	--	--	--	--	0.05	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Chrysene	--	--	--	--	--	--	--	0.09	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Fluoranthene	--	--	--	--	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Hexachlorobenzene	--	--	--	--	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	1	NS	
Indeno(1,2,3-cd)Pyrene	--	--	--	--	--	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Naphthalene	--	--	--	--	--	--	--	0.62	--	--	--	--	--	--	--	--	--	--	--	100	NS	
Pentachlorophenol	--	--	--	--	--	--	--	<1.01	--	--	--	--	--	--	--	--	--	--	--	1	NS	
Phenanthrene	--	--	--	--	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
Pyrene	--	--	--	--	--	--	--	<0.2	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
All other SVOCs	--	--	--	--	--	--	--	ND	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
<b>TOTAL PETROLEUM HYDROCARBONS (mg/L)</b>																						
Diesel Range Organics [C10-C28]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	NS	NS	
<b>TOTAL METALS (mg/L)</b>																						
Arsenic	<0.001	--	<0.001	--	--	0.003	--	0.0065	0.0027	0.0042	--	--	0.003	--	--	--	<0.001	--	<0.001	0.01	NS	
Barium	0.034	--	<0.025	--	--	<0.025	--	0.096	0.121	0.061	--	--	0.049	--	--	--	0.035	--	<0			

**ATTACHMENT E**  
**Laboratory Reports**



*CERTIFICATE OF ANALYSIS*

Julie Freshman  
Resource Controls  
474 Broadway  
Pawtucket, RI 02860-1377

**RE: Bay Spring Ave (7131A)**  
**ESS Laboratory Work Order Number: 1603703**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard  
Laboratory Director

**REVIEWED**

*By ESS Laboratory at 12:07 pm, Apr 05, 2016*

**Analytical Summary**

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave

ESS Laboratory Work Order: 1603703

**SAMPLE RECEIPT**

The following samples were received on March 29, 2016 for the analyses specified on the enclosed Chain of Custody Record.

**The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice.**

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1603703-01	MW-105	Ground Water	8260B
1603703-02	MW-3	Ground Water	8260B
1603703-03	MW-5	Ground Water	8260B





*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave

ESS Laboratory Work Order: 1603703

**PROJECT NARRATIVE**

**8260B Volatile Organic Compounds**

- CC63041-BS1 **Blank Spike recovery is below lower control limit (B-).**  
2,2-Dichloropropane (68% @ 70-130%), Bromomethane (27% @ 70-130%)
- CC63041-BSD1 **Blank Spike recovery is below lower control limit (B-).**  
2,2-Dichloropropane (69% @ 70-130%), Bromomethane (30% @ 70-130%)
- CC63132-BS1 **Blank Spike recovery is below lower control limit (B-).**  
Bromomethane (47% @ 70-130%)
- CC63132-BSD1 **Blank Spike recovery is below lower control limit (B-).**  
Bromomethane (60% @ 70-130%)
- CZC0536-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**  
Bromomethane (69% @ 30%), Tertiary-amyl methyl ether (33% @ 30%)
- CZC0555-CCV1 **Continuing Calibration %Diff/Drift is below control limit (CD-).**  
Bromomethane (54% @ 30%)

**No other observations noted.**

**End of Project Narrative.**

**DATA USABILITY LINKS**

- [Definitions of Quality Control Parameters](#)
- [Semivolatile Organics Internal Standard Information](#)
- [Semivolatile Organics Surrogate Information](#)
- [Volatile Organics Internal Standard Information](#)
- [Volatile Organics Surrogate Information](#)
- [EPH and VPH Alkane Lists](#)



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave

ESS Laboratory Work Order: 1603703

**CURRENT SW-846 METHODOLOGY VERSIONS**

**Analytical Methods**

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015D - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

**Prep Methods**

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3546 - Microwave Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5030C - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave  
Client Sample ID: MW-105  
Date Sampled: 03/29/16 12:45  
Percent Solids: N/A  
Initial Volume: 5  
Final Volume: 5  
Extraction Method: 5030B

ESS Laboratory Work Order: 1603703  
ESS Laboratory Sample ID: 1603703-01  
Sample Matrix: Ground Water  
Units: mg/L  
Analyst: MD

**8260B Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
<b>1,1,1-Trichloroethane</b>	<b>0.0046</b> (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
<b>1,1-Dichloroethane</b>	<b>0.0017</b> (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,1-Dichloroethene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,1-Dichloropropene	ND (0.0020)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,2-Dibromoethane	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,2-Dichloroethane	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,2-Dichloropropane	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,3-Dichloropropane	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1,4-Dioxane - Screen	ND (0.500)		8260B		1	03/31/16 12:39	CZC0536	CC63041
1-Chlorohexane	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
2,2-Dichloropropane	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
2-Butanone	ND (0.0100)		8260B		1	03/31/16 12:39	CZC0536	CC63041
2-Chlorotoluene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
2-Hexanone	ND (0.0100)		8260B		1	03/31/16 12:39	CZC0536	CC63041
4-Chlorotoluene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
4-Isopropyltoluene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Acetone	ND (0.0100)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Benzene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Bromobenzene	ND (0.0020)		8260B		1	03/31/16 12:39	CZC0536	CC63041



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave  
Client Sample ID: MW-105  
Date Sampled: 03/29/16 12:45  
Percent Solids: N/A  
Initial Volume: 5  
Final Volume: 5  
Extraction Method: 5030B

ESS Laboratory Work Order: 1603703  
ESS Laboratory Sample ID: 1603703-01  
Sample Matrix: Ground Water  
Units: mg/L  
Analyst: MD

**8260B Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Bromodichloromethane	ND (0.0006)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Bromoform	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Bromomethane	ND (0.0020)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Carbon Disulfide	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Carbon Tetrachloride	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Chlorobenzene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Chloroethane	ND (0.0020)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Chloroform	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Chloromethane	ND (0.0020)		8260B		1	03/31/16 12:39	CZC0536	CC63041
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Dibromochloromethane	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Dibromomethane	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Dichlorodifluoromethane	ND (0.0020)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Diethyl Ether	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Di-isopropyl ether	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Ethylbenzene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Hexachlorobutadiene	ND (0.0006)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Hexachloroethane	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Isopropylbenzene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Methylene Chloride	ND (0.0020)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Naphthalene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
n-Butylbenzene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
n-Propylbenzene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
sec-Butylbenzene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Styrene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
tert-Butylbenzene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Tetrachloroethene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave  
Client Sample ID: MW-105  
Date Sampled: 03/29/16 12:45  
Percent Solids: N/A  
Initial Volume: 5  
Final Volume: 5  
Extraction Method: 5030B

ESS Laboratory Work Order: 1603703  
ESS Laboratory Sample ID: 1603703-01  
Sample Matrix: Ground Water  
Units: mg/L  
Analyst: MD

**8260B Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Toluene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	03/31/16 12:39	CZC0536	CC63041
<b>Trichloroethene</b>	<b>0.0048</b> (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Trichlorofluoromethane	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Vinyl Acetate	ND (0.0050)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Vinyl Chloride	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Xylene O	ND (0.0010)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Xylene P,M	ND (0.0020)		8260B		1	03/31/16 12:39	CZC0536	CC63041
Xylenes (Total)	ND (0.0020)		8260B		1	03/31/16 12:39		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>106 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>95 %</i>		<i>70-130</i>



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave  
Client Sample ID: MW-3  
Date Sampled: 03/29/16 12:55  
Percent Solids: N/A  
Initial Volume: 5  
Final Volume: 5  
Extraction Method: 5030B

ESS Laboratory Work Order: 1603703  
ESS Laboratory Sample ID: 1603703-02  
Sample Matrix: Ground Water  
Units: mg/L  
Analyst: MD

**8260B Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
<b>1,1,1-Trichloroethane</b>	<b>0.0110</b> (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
<b>1,1-Dichloroethane</b>	<b>0.0043</b> (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,1-Dichloroethene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,1-Dichloropropene	ND (0.0020)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,2-Dibromoethane	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,2-Dichloroethane	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,2-Dichloropropane	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,3-Dichloropropane	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1,4-Dioxane - Screen	ND (0.500)		8260B		1	03/31/16 13:05	CZC0536	CC63041
1-Chlorohexane	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
2,2-Dichloropropane	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
2-Butanone	ND (0.0100)		8260B		1	03/31/16 13:05	CZC0536	CC63041
2-Chlorotoluene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
2-Hexanone	ND (0.0100)		8260B		1	03/31/16 13:05	CZC0536	CC63041
4-Chlorotoluene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
4-Isopropyltoluene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Acetone	ND (0.0100)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Benzene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Bromobenzene	ND (0.0020)		8260B		1	03/31/16 13:05	CZC0536	CC63041



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave  
Client Sample ID: MW-3  
Date Sampled: 03/29/16 12:55  
Percent Solids: N/A  
Initial Volume: 5  
Final Volume: 5  
Extraction Method: 5030B

ESS Laboratory Work Order: 1603703  
ESS Laboratory Sample ID: 1603703-02  
Sample Matrix: Ground Water  
Units: mg/L  
Analyst: MD

**8260B Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Bromodichloromethane	ND (0.0006)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Bromoform	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Bromomethane	ND (0.0020)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Carbon Disulfide	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Carbon Tetrachloride	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Chlorobenzene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Chloroethane	ND (0.0020)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Chloroform	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Chloromethane	ND (0.0020)		8260B		1	03/31/16 13:05	CZC0536	CC63041
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Dibromochloromethane	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Dibromomethane	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Dichlorodifluoromethane	ND (0.0020)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Diethyl Ether	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Di-isopropyl ether	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Ethylbenzene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Hexachlorobutadiene	ND (0.0006)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Hexachloroethane	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Isopropylbenzene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Methylene Chloride	ND (0.0020)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Naphthalene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
n-Butylbenzene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
n-Propylbenzene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
sec-Butylbenzene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Styrene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
tert-Butylbenzene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Tetrachloroethene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave  
Client Sample ID: MW-3  
Date Sampled: 03/29/16 12:55  
Percent Solids: N/A  
Initial Volume: 5  
Final Volume: 5  
Extraction Method: 5030B

ESS Laboratory Work Order: 1603703  
ESS Laboratory Sample ID: 1603703-02  
Sample Matrix: Ground Water  
Units: mg/L  
Analyst: MD

**8260B Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Toluene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Trichloroethene	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Trichlorofluoromethane	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Vinyl Acetate	ND (0.0050)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Vinyl Chloride	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Xylene O	ND (0.0010)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Xylene P,M	ND (0.0020)		8260B		1	03/31/16 13:05	CZC0536	CC63041
Xylenes (Total)	ND (0.0020)		8260B		1	03/31/16 13:05		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>94 %</i>		<i>70-130</i>





*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave  
Client Sample ID: MW-5  
Date Sampled: 03/29/16 14:00  
Percent Solids: N/A  
Initial Volume: 5  
Final Volume: 5  
Extraction Method: 5030B

ESS Laboratory Work Order: 1603703  
ESS Laboratory Sample ID: 1603703-03  
Sample Matrix: Ground Water  
Units: mg/L  
Analyst: MD

**8260B Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,1-Dichloroethane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,1-Dichloroethene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,1-Dichloropropene	ND (0.0020)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
<b>1,2,4-Trimethylbenzene</b>	<b>0.0011</b> (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,2-Dibromoethane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,2-Dichloroethane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,2-Dichloropropane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
<b>1,3,5-Trimethylbenzene</b>	<b>0.0257</b> (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,3-Dichloropropane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1,4-Dioxane - Screen	ND (0.500)		8260B		1	03/31/16 20:17	CZC0555	CC63132
1-Chlorohexane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
2,2-Dichloropropane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
2-Butanone	ND (0.0100)		8260B		1	03/31/16 20:17	CZC0555	CC63132
2-Chlorotoluene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
2-Hexanone	ND (0.0100)		8260B		1	03/31/16 20:17	CZC0555	CC63132
4-Chlorotoluene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
<b>4-Isopropyltoluene</b>	<b>0.0064</b> (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Acetone	ND (0.0100)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Benzene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Bromobenzene	ND (0.0020)		8260B		1	03/31/16 20:17	CZC0555	CC63132



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave  
Client Sample ID: MW-5  
Date Sampled: 03/29/16 14:00  
Percent Solids: N/A  
Initial Volume: 5  
Final Volume: 5  
Extraction Method: 5030B

ESS Laboratory Work Order: 1603703  
ESS Laboratory Sample ID: 1603703-03  
Sample Matrix: Ground Water  
Units: mg/L  
Analyst: MD

**8260B Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Bromodichloromethane	ND (0.0006)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Bromoform	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Bromomethane	ND (0.0020)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Carbon Disulfide	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Carbon Tetrachloride	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Chlorobenzene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Chloroethane	ND (0.0020)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Chloroform	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Chloromethane	ND (0.0020)		8260B		1	03/31/16 20:17	CZC0555	CC63132
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Dibromochloromethane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Dibromomethane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Dichlorodifluoromethane	ND (0.0020)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Diethyl Ether	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Di-isopropyl ether	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Ethylbenzene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Hexachlorobutadiene	ND (0.0006)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Hexachloroethane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Isopropylbenzene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Methylene Chloride	ND (0.0020)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Naphthalene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
n-Butylbenzene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
n-Propylbenzene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
sec-Butylbenzene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Styrene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
tert-Butylbenzene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Tetrachloroethene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave  
Client Sample ID: MW-5  
Date Sampled: 03/29/16 14:00  
Percent Solids: N/A  
Initial Volume: 5  
Final Volume: 5  
Extraction Method: 5030B

ESS Laboratory Work Order: 1603703  
ESS Laboratory Sample ID: 1603703-03  
Sample Matrix: Ground Water  
Units: mg/L  
Analyst: MD

**8260B Volatile Organic Compounds**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Toluene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Trichloroethene	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Trichlorofluoromethane	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Vinyl Acetate	ND (0.0050)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Vinyl Chloride	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Xylene O	ND (0.0010)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Xylene P,M	ND (0.0020)		8260B		1	03/31/16 20:17	CZC0555	CC63132
Xylenes (Total)	ND (0.0020)		8260B		1	03/31/16 20:17		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>100 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>101 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>108 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>91 %</i>		<i>70-130</i>



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
 Client Project ID: Bay Spring Ave

ESS Laboratory Work Order: 1603703

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch CC63041 - 5030B**

**Blank**

1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							



CERTIFICATE OF ANALYSIS

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave

ESS Laboratory Work Order: 1603703

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch CC63041 - 5030B**

Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Xylenes (Total)	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0228		mg/L	0.02500		91	70-130			
Surrogate: 4-Bromofluorobenzene	0.0232		mg/L	0.02500		93	70-130			
Surrogate: Dibromofluoromethane	0.0248		mg/L	0.02500		99	70-130			
Surrogate: Toluene-d8	0.0240		mg/L	0.02500		96	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	9.27		ug/L	10.00		93	70-130			
1,1,1-Trichloroethane	8.96		ug/L	10.00		90	70-130			
1,1,2,2-Tetrachloroethane	10.5		ug/L	10.00		105	70-130			
1,1,2-Trichloroethane	9.22		ug/L	10.00		92	70-130			
1,1-Dichloroethane	9.06		ug/L	10.00		91	70-130			
1,1-Dichloroethene	10.4		ug/L	10.00		104	70-130			
1,1-Dichloropropene	9.80		ug/L	10.00		98	70-130			
1,2,3-Trichlorobenzene	9.66		ug/L	10.00		97	70-130			
1,2,3-Trichloropropane	9.28		ug/L	10.00		93	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave

ESS Laboratory Work Order: 1603703

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch CC63041 - 5030B**

1,2,4-Trichlorobenzene	9.72		ug/L	10.00		97	70-130			
1,2,4-Trimethylbenzene	9.62		ug/L	10.00		96	70-130			
1,2-Dibromo-3-Chloropropane	10.8		ug/L	10.00		108	70-130			
1,2-Dibromoethane	10.2		ug/L	10.00		102	70-130			
1,2-Dichlorobenzene	10.4		ug/L	10.00		104	70-130			
1,2-Dichloroethane	8.98		ug/L	10.00		90	70-130			
1,2-Dichloropropane	8.97		ug/L	10.00		90	70-130			
1,3,5-Trimethylbenzene	9.80		ug/L	10.00		98	70-130			
1,3-Dichlorobenzene	10.3		ug/L	10.00		103	70-130			
1,3-Dichloropropane	10.6		ug/L	10.00		106	70-130			
1,4-Dichlorobenzene	10.2		ug/L	10.00		102	70-130			
1,4-Dioxane - Screen	242		ug/L	200.0		121	0-332			
1-Chlorohexane	10.0		ug/L	10.00		100	70-130			
2,2-Dichloropropane	6.76		ug/L	10.00		68	70-130			B-
2-Butanone	51.8		ug/L	50.00		104	70-130			
2-Chlorotoluene	10.1		ug/L	10.00		101	70-130			
2-Hexanone	58.4		ug/L	50.00		117	70-130			
4-Chlorotoluene	10.2		ug/L	10.00		102	70-130			
4-Isopropyltoluene	9.76		ug/L	10.00		98	70-130			
4-Methyl-2-Pentanone	55.4		ug/L	50.00		111	70-130			
Acetone	47.3		ug/L	50.00		95	70-130			
Benzene	9.54		ug/L	10.00		95	70-130			
Bromobenzene	10.5		ug/L	10.00		105	70-130			
Bromochloromethane	9.73		ug/L	10.00		97	70-130			
Bromodichloromethane	9.04		ug/L	10.00		90	70-130			
Bromoform	8.95		ug/L	10.00		90	70-130			
Bromomethane	2.69		ug/L	10.00		27	70-130			B-
Carbon Disulfide	9.23		ug/L	10.00		92	70-130			
Carbon Tetrachloride	8.82		ug/L	10.00		88	70-130			
Chlorobenzene	9.93		ug/L	10.00		99	70-130			
Chloroethane	7.69		ug/L	10.00		77	70-130			
Chloroform	8.73		ug/L	10.00		87	70-130			
Chloromethane	7.96		ug/L	10.00		80	70-130			
cis-1,2-Dichloroethene	10.4		ug/L	10.00		104	70-130			
cis-1,3-Dichloropropene	9.79		ug/L	10.00		98	70-130			
Dibromochloromethane	9.85		ug/L	10.00		98	70-130			
Dibromomethane	8.91		ug/L	10.00		89	70-130			
Dichlorodifluoromethane	9.46		ug/L	10.00		95	70-130			
Diethyl Ether	10.3		ug/L	10.00		103	70-130			
Di-isopropyl ether	9.77		ug/L	10.00		98	70-130			
Ethyl tertiary-butyl ether	8.47		ug/L	10.00		85	70-130			
Ethylbenzene	9.66		ug/L	10.00		97	70-130			
Hexachlorobutadiene	9.73		ug/L	10.00		97	70-130			
Hexachloroethane	8.91		ug/L	10.00		89	70-130			
Isopropylbenzene	10.0		ug/L	10.00		100	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave

ESS Laboratory Work Order: 1603703

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8260B Volatile Organic Compounds**

**Batch CC63041 - 5030B**

Methyl tert-Butyl Ether	9.31		ug/L	10.00		93	70-130			
Methylene Chloride	9.63		ug/L	10.00		96	70-130			
Naphthalene	12.4		ug/L	10.00		124	70-130			
n-Butylbenzene	8.98		ug/L	10.00		90	70-130			
n-Propylbenzene	10.0		ug/L	10.00		100	70-130			
sec-Butylbenzene	9.95		ug/L	10.00		100	70-130			
Styrene	9.56		ug/L	10.00		96	70-130			
tert-Butylbenzene	10.1		ug/L	10.00		101	70-130			
Tertiary-amyl methyl ether	7.40		ug/L	10.00		74	70-130			
Tetrachloroethene	7.25		ug/L	10.00		72	70-130			
Tetrahydrofuran	10.4		ug/L	10.00		104	70-130			
Toluene	9.41		ug/L	10.00		94	70-130			
trans-1,2-Dichloroethene	10.1		ug/L	10.00		101	70-130			
trans-1,3-Dichloropropene	8.43		ug/L	10.00		84	70-130			
Trichloroethene	9.23		ug/L	10.00		92	70-130			
Trichlorofluoromethane	8.41		ug/L	10.00		84	70-130			
Vinyl Acetate	11.0		ug/L	10.00		110	70-130			
Vinyl Chloride	8.37		ug/L	10.00		84	70-130			
Xylene O	9.97		ug/L	10.00		100	70-130			
Xylene P,M	20.0		ug/L	20.00		100	70-130			
Xylenes (Total)	29.9		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0243		mg/L	0.02500		97	70-130			
Surrogate: 4-Bromofluorobenzene	0.0268		mg/L	0.02500		107	70-130			
Surrogate: Dibromofluoromethane	0.0262		mg/L	0.02500		105	70-130			
Surrogate: Toluene-d8	0.0268		mg/L	0.02500		107	70-130			

**LCS Dup**

1,1,1,2-Tetrachloroethane	8.93		ug/L	10.00		89	70-130	4	25	
1,1,1-Trichloroethane	9.02		ug/L	10.00		90	70-130	0.7	25	
1,1,2,2-Tetrachloroethane	10.3		ug/L	10.00		103	70-130	2	25	
1,1,2-Trichloroethane	9.23		ug/L	10.00		92	70-130	0.1	25	
1,1-Dichloroethane	9.17		ug/L	10.00		92	70-130	1	25	
1,1-Dichloroethene	10.1		ug/L	10.00		101	70-130	3	25	
1,1-Dichloropropene	9.94		ug/L	10.00		99	70-130	1	25	
1,2,3-Trichlorobenzene	9.39		ug/L	10.00		94	70-130	3	25	
1,2,3-Trichloropropane	9.17		ug/L	10.00		92	70-130	1	25	
1,2,4-Trichlorobenzene	9.56		ug/L	10.00		96	70-130	2	25	
1,2,4-Trimethylbenzene	9.51		ug/L	10.00		95	70-130	1	25	
1,2-Dibromo-3-Chloropropane	10.5		ug/L	10.00		105	70-130	2	25	
1,2-Dibromoethane	9.88		ug/L	10.00		99	70-130	3	25	
1,2-Dichlorobenzene	10.2		ug/L	10.00		102	70-130	2	25	
1,2-Dichloroethane	8.99		ug/L	10.00		90	70-130	0.1	25	
1,2-Dichloropropane	9.16		ug/L	10.00		92	70-130	2	25	
1,3,5-Trimethylbenzene	9.70		ug/L	10.00		97	70-130	1	25	
1,3-Dichlorobenzene	10.0		ug/L	10.00		100	70-130	3	25	
1,3-Dichloropropane	10.2		ug/L	10.00		102	70-130	4	25	



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave

ESS Laboratory Work Order: 1603703

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8260B Volatile Organic Compounds**

**Batch CC63041 - 5030B**

1,4-Dichlorobenzene	10.1		ug/L	10.00		101	70-130	2	25	
1,4-Dioxane - Screen	238		ug/L	200.0		119	0-332	2	200	
1-Chlorohexane	10.1		ug/L	10.00		101	70-130	0.6	25	
2,2-Dichloropropane	6.86		ug/L	10.00		69	70-130	1	25	B-
2-Butanone	51.6		ug/L	50.00		103	70-130	0.3	25	
2-Chlorotoluene	9.96		ug/L	10.00		100	70-130	1	25	
2-Hexanone	57.6		ug/L	50.00		115	70-130	1	25	
4-Chlorotoluene	10.1		ug/L	10.00		101	70-130	1	25	
4-Isopropyltoluene	9.55		ug/L	10.00		96	70-130	2	25	
4-Methyl-2-Pentanone	55.1		ug/L	50.00		110	70-130	0.5	25	
Acetone	49.1		ug/L	50.00		98	70-130	4	25	
Benzene	9.58		ug/L	10.00		96	70-130	0.4	25	
Bromobenzene	10.5		ug/L	10.00		105	70-130	0.2	25	
Bromochloromethane	9.83		ug/L	10.00		98	70-130	1	25	
Bromodichloromethane	8.92		ug/L	10.00		89	70-130	1	25	
Bromoform	8.69		ug/L	10.00		87	70-130	3	25	
Bromomethane	3.04		ug/L	10.00		30	70-130	12	25	B-
Carbon Disulfide	9.17		ug/L	10.00		92	70-130	0.7	25	
Carbon Tetrachloride	8.93		ug/L	10.00		89	70-130	1	25	
Chlorobenzene	9.56		ug/L	10.00		96	70-130	4	25	
Chloroethane	7.67		ug/L	10.00		77	70-130	0.3	25	
Chloroform	8.74		ug/L	10.00		87	70-130	0.1	25	
Chloromethane	8.56		ug/L	10.00		86	70-130	7	25	
cis-1,2-Dichloroethene	10.4		ug/L	10.00		104	70-130	0.5	25	
cis-1,3-Dichloropropene	9.70		ug/L	10.00		97	70-130	0.9	25	
Dibromochloromethane	9.55		ug/L	10.00		96	70-130	3	25	
Dibromomethane	8.94		ug/L	10.00		89	70-130	0.3	25	
Dichlorodifluoromethane	9.43		ug/L	10.00		94	70-130	0.3	25	
Diethyl Ether	10.4		ug/L	10.00		104	70-130	0.5	25	
Di-isopropyl ether	9.80		ug/L	10.00		98	70-130	0.3	25	
Ethyl tertiary-butyl ether	8.88		ug/L	10.00		89	70-130	5	25	
Ethylbenzene	9.43		ug/L	10.00		94	70-130	2	25	
Hexachlorobutadiene	9.45		ug/L	10.00		94	70-130	3	25	
Hexachloroethane	8.74		ug/L	10.00		87	70-130	2	25	
Isopropylbenzene	9.95		ug/L	10.00		100	70-130	1	25	
Methyl tert-Butyl Ether	9.59		ug/L	10.00		96	70-130	3	25	
Methylene Chloride	9.69		ug/L	10.00		97	70-130	0.6	25	
Naphthalene	11.7		ug/L	10.00		117	70-130	6	25	
n-Butylbenzene	8.81		ug/L	10.00		88	70-130	2	25	
n-Propylbenzene	9.89		ug/L	10.00		99	70-130	1	25	
sec-Butylbenzene	9.80		ug/L	10.00		98	70-130	2	25	
Styrene	9.48		ug/L	10.00		95	70-130	0.8	25	
tert-Butylbenzene	9.95		ug/L	10.00		100	70-130	2	25	
Tertiary-amyl methyl ether	7.95		ug/L	10.00		80	70-130	7	25	
Tetrachloroethene	7.10		ug/L	10.00		71	70-130	2	25	





CERTIFICATE OF ANALYSIS

Client Name: Resource Controls  
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ESS Laboratory Work Order: 1603703

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch CC63041 - 5030B**

Tetrahydrofuran	10.6		ug/L	10.00		106	70-130	2	25	
Toluene	9.48		ug/L	10.00		95	70-130	0.7	25	
trans-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130	0.4	25	
trans-1,3-Dichloropropene	8.47		ug/L	10.00		85	70-130	0.5	25	
Trichloroethene	9.09		ug/L	10.00		91	70-130	2	25	
Trichlorofluoromethane	8.57		ug/L	10.00		86	70-130	2	25	
Vinyl Acetate	11.0		ug/L	10.00		110	70-130	0.4	25	
Vinyl Chloride	8.30		ug/L	10.00		83	70-130	0.8	25	
Xylene O	9.69		ug/L	10.00		97	70-130	3	25	
Xylene P,M	19.6		ug/L	20.00		98	70-130	2	25	
Xylenes (Total)	29.3		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0238		mg/L	0.02500		95	70-130			
Surrogate: 4-Bromofluorobenzene	0.0259		mg/L	0.02500		104	70-130			
Surrogate: Dibromofluoromethane	0.0258		mg/L	0.02500		103	70-130			
Surrogate: Toluene-d8	0.0261		mg/L	0.02500		105	70-130			

**Batch CC63132 - 5030B**

<b>Blank</b>										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							



*CERTIFICATE OF ANALYSIS*

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**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8260B Volatile Organic Compounds**

**Batch CC63132 - 5030B**

4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							



CERTIFICATE OF ANALYSIS

Client Name: Resource Controls  
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ESS Laboratory Work Order: 1603703

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch CC63132 - 5030B**

Xylene P,M	ND	0.0020	mg/L							
Xylenes (Total)	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0250		mg/L	0.02500		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.0227		mg/L	0.02500		91	70-130			
Surrogate: Dibromofluoromethane	0.0266		mg/L	0.02500		107	70-130			
Surrogate: Toluene-d8	0.0234		mg/L	0.02500		93	70-130			

**LCS**

1,1,1,2-Tetrachloroethane	9.33		ug/L	10.00		93	70-130			
1,1,1-Trichloroethane	9.37		ug/L	10.00		94	70-130			
1,1,2,2-Tetrachloroethane	10.1		ug/L	10.00		101	70-130			
1,1,2-Trichloroethane	9.38		ug/L	10.00		94	70-130			
1,1-Dichloroethane	9.35		ug/L	10.00		94	70-130			
1,1-Dichloroethene	10.1		ug/L	10.00		101	70-130			
1,1-Dichloropropene	10.3		ug/L	10.00		103	70-130			
1,2,3-Trichlorobenzene	10.2		ug/L	10.00		102	70-130			
1,2,3-Trichloropropane	9.11		ug/L	10.00		91	70-130			
1,2,4-Trichlorobenzene	10.4		ug/L	10.00		104	70-130			
1,2,4-Trimethylbenzene	9.38		ug/L	10.00		94	70-130			
1,2-Dibromo-3-Chloropropane	10.7		ug/L	10.00		107	70-130			
1,2-Dibromoethane	10.1		ug/L	10.00		101	70-130			
1,2-Dichlorobenzene	10.1		ug/L	10.00		101	70-130			
1,2-Dichloroethane	9.40		ug/L	10.00		94	70-130			
1,2-Dichloropropane	8.85		ug/L	10.00		88	70-130			
1,3,5-Trimethylbenzene	9.54		ug/L	10.00		95	70-130			
1,3-Dichlorobenzene	10.2		ug/L	10.00		102	70-130			
1,3-Dichloropropane	10.6		ug/L	10.00		106	70-130			
1,4-Dichlorobenzene	10.3		ug/L	10.00		103	70-130			
1,4-Dioxane - Screen	226		ug/L	200.0		113	0-332			
1-Chlorohexane	10.1		ug/L	10.00		101	70-130			
2,2-Dichloropropane	9.70		ug/L	10.00		97	70-130			
2-Butanone	50.8		ug/L	50.00		102	70-130			
2-Chlorotoluene	9.92		ug/L	10.00		99	70-130			
2-Hexanone	55.9		ug/L	50.00		112	70-130			
4-Chlorotoluene	10.2		ug/L	10.00		102	70-130			
4-Isopropyltoluene	9.62		ug/L	10.00		96	70-130			
4-Methyl-2-Pentanone	52.0		ug/L	50.00		104	70-130			
Acetone	49.2		ug/L	50.00		98	70-130			
Benzene	9.47		ug/L	10.00		95	70-130			
Bromobenzene	10.2		ug/L	10.00		102	70-130			
Bromochloromethane	9.59		ug/L	10.00		96	70-130			
Bromodichloromethane	9.37		ug/L	10.00		94	70-130			
Bromoform	9.48		ug/L	10.00		95	70-130			
Bromomethane	4.71		ug/L	10.00		47	70-130			B-
Carbon Disulfide	9.14		ug/L	10.00		91	70-130			
Carbon Tetrachloride	9.43		ug/L	10.00		94	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave

ESS Laboratory Work Order: 1603703

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8260B Volatile Organic Compounds**

**Batch CC63132 - 5030B**

Chlorobenzene	9.85		ug/L	10.00		98	70-130			
Chloroethane	7.77		ug/L	10.00		78	70-130			
Chloroform	9.07		ug/L	10.00		91	70-130			
Chloromethane	9.30		ug/L	10.00		93	70-130			
cis-1,2-Dichloroethene	10.1		ug/L	10.00		101	70-130			
cis-1,3-Dichloropropene	9.94		ug/L	10.00		99	70-130			
Dibromochloromethane	10.0		ug/L	10.00		100	70-130			
Dibromomethane	9.15		ug/L	10.00		92	70-130			
Dichlorodifluoromethane	10.2		ug/L	10.00		102	70-130			
Diethyl Ether	10.2		ug/L	10.00		102	70-130			
Di-isopropyl ether	9.32		ug/L	10.00		93	70-130			
Ethyl tertiary-butyl ether	9.65		ug/L	10.00		96	70-130			
Ethylbenzene	9.55		ug/L	10.00		96	70-130			
Hexachlorobutadiene	10.2		ug/L	10.00		102	70-130			
Hexachloroethane	9.18		ug/L	10.00		92	70-130			
Isopropylbenzene	9.55		ug/L	10.00		96	70-130			
Methyl tert-Butyl Ether	9.72		ug/L	10.00		97	70-130			
Methylene Chloride	9.88		ug/L	10.00		99	70-130			
Naphthalene	12.3		ug/L	10.00		123	70-130			
n-Butylbenzene	9.71		ug/L	10.00		97	70-130			
n-Propylbenzene	9.86		ug/L	10.00		99	70-130			
sec-Butylbenzene	9.96		ug/L	10.00		100	70-130			
Styrene	9.92		ug/L	10.00		99	70-130			
tert-Butylbenzene	9.64		ug/L	10.00		96	70-130			
Tertiary-amyl methyl ether	9.19		ug/L	10.00		92	70-130			
Tetrachloroethene	7.24		ug/L	10.00		72	70-130			
Tetrahydrofuran	10.5		ug/L	10.00		105	70-130			
Toluene	9.36		ug/L	10.00		94	70-130			
trans-1,2-Dichloroethene	9.98		ug/L	10.00		100	70-130			
trans-1,3-Dichloropropene	8.90		ug/L	10.00		89	70-130			
Trichloroethene	9.23		ug/L	10.00		92	70-130			
Trichlorofluoromethane	9.03		ug/L	10.00		90	70-130			
Vinyl Acetate	10.8		ug/L	10.00		108	70-130			
Vinyl Chloride	8.85		ug/L	10.00		88	70-130			
Xylene O	9.88		ug/L	10.00		99	70-130			
Xylene P,M	19.8		ug/L	20.00		99	70-130			
Xylenes (Total)	29.7		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0252		mg/L	0.02500		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.0271		mg/L	0.02500		108	70-130			
Surrogate: Dibromofluoromethane	0.0267		mg/L	0.02500		107	70-130			
Surrogate: Toluene-d8	0.0259		mg/L	0.02500		104	70-130			

<b>LCS Dup</b>										
1,1,1,2-Tetrachloroethane	9.07		ug/L	10.00		91	70-130	3	25	
1,1,1-Trichloroethane	9.11		ug/L	10.00		91	70-130	3	25	
1,1,2,2-Tetrachloroethane	9.47		ug/L	10.00		95	70-130	7	25	



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave

ESS Laboratory Work Order: 1603703

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8260B Volatile Organic Compounds**

**Batch CC63132 - 5030B**

1,1,2-Trichloroethane	8.56		ug/L	10.00		86	70-130	9	25	
1,1-Dichloroethane	8.99		ug/L	10.00		90	70-130	4	25	
1,1-Dichloroethene	9.83		ug/L	10.00		98	70-130	3	25	
1,1-Dichloropropene	9.87		ug/L	10.00		99	70-130	4	25	
1,2,3-Trichlorobenzene	9.19		ug/L	10.00		92	70-130	10	25	
1,2,3-Trichloropropane	8.46		ug/L	10.00		85	70-130	7	25	
1,2,4-Trichlorobenzene	9.20		ug/L	10.00		92	70-130	12	25	
1,2,4-Trimethylbenzene	9.35		ug/L	10.00		94	70-130	0.3	25	
1,2-Dibromo-3-Chloropropane	9.99		ug/L	10.00		100	70-130	6	25	
1,2-Dibromoethane	9.33		ug/L	10.00		93	70-130	8	25	
1,2-Dichlorobenzene	10.0		ug/L	10.00		100	70-130	0.2	25	
1,2-Dichloroethane	9.12		ug/L	10.00		91	70-130	3	25	
1,2-Dichloropropane	8.67		ug/L	10.00		87	70-130	2	25	
1,3,5-Trimethylbenzene	9.70		ug/L	10.00		97	70-130	2	25	
1,3-Dichlorobenzene	10.2		ug/L	10.00		102	70-130	0.2	25	
1,3-Dichloropropane	10.1		ug/L	10.00		101	70-130	5	25	
1,4-Dichlorobenzene	9.84		ug/L	10.00		98	70-130	4	25	
1,4-Dioxane - Screen	212		ug/L	200.0		106	0-332	6	200	
1-Chlorohexane	9.97		ug/L	10.00		100	70-130	1	25	
2,2-Dichloropropane	9.33		ug/L	10.00		93	70-130	4	25	
2-Butanone	46.9		ug/L	50.00		94	70-130	8	25	
2-Chlorotoluene	10.1		ug/L	10.00		101	70-130	2	25	
2-Hexanone	49.3		ug/L	50.00		99	70-130	13	25	
4-Chlorotoluene	10.1		ug/L	10.00		101	70-130	0.8	25	
4-Isopropyltoluene	9.53		ug/L	10.00		95	70-130	0.9	25	
4-Methyl-2-Pentanone	47.4		ug/L	50.00		95	70-130	9	25	
Acetone	43.9		ug/L	50.00		88	70-130	12	25	
Benzene	9.42		ug/L	10.00		94	70-130	0.5	25	
Bromobenzene	10.0		ug/L	10.00		100	70-130	2	25	
Bromochloromethane	9.31		ug/L	10.00		93	70-130	3	25	
Bromodichloromethane	9.06		ug/L	10.00		91	70-130	3	25	
Bromoform	8.43		ug/L	10.00		84	70-130	12	25	
Bromomethane	5.95		ug/L	10.00		60	70-130	23	25	B-
Carbon Disulfide	9.08		ug/L	10.00		91	70-130	0.7	25	
Carbon Tetrachloride	9.33		ug/L	10.00		93	70-130	1	25	
Chlorobenzene	9.52		ug/L	10.00		95	70-130	3	25	
Chloroethane	7.67		ug/L	10.00		77	70-130	1	25	
Chloroform	8.76		ug/L	10.00		88	70-130	3	25	
Chloromethane	8.76		ug/L	10.00		88	70-130	6	25	
cis-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130	0.6	25	
cis-1,3-Dichloropropene	9.55		ug/L	10.00		96	70-130	4	25	
Dibromochloromethane	9.47		ug/L	10.00		95	70-130	6	25	
Dibromomethane	8.74		ug/L	10.00		87	70-130	5	25	
Dichlorodifluoromethane	9.74		ug/L	10.00		97	70-130	5	25	
Diethyl Ether	9.60		ug/L	10.00		96	70-130	6	25	



CERTIFICATE OF ANALYSIS

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave

ESS Laboratory Work Order: 1603703

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

**Batch CC63132 - 5030B**

Di-isopropyl ether	9.11		ug/L	10.00		91	70-130	2	25	
Ethyl tertiary-butyl ether	8.62		ug/L	10.00		86	70-130	11	25	
Ethylbenzene	9.24		ug/L	10.00		92	70-130	3	25	
Hexachlorobutadiene	10.1		ug/L	10.00		101	70-130	2	25	
Hexachloroethane	8.57		ug/L	10.00		86	70-130	7	25	
Isopropylbenzene	9.59		ug/L	10.00		96	70-130	0.4	25	
Methyl tert-Butyl Ether	8.93		ug/L	10.00		89	70-130	8	25	
Methylene Chloride	9.81		ug/L	10.00		98	70-130	0.7	25	
Naphthalene	11.4		ug/L	10.00		114	70-130	8	25	
n-Butylbenzene	8.86		ug/L	10.00		89	70-130	9	25	
n-Propylbenzene	9.79		ug/L	10.00		98	70-130	0.7	25	
sec-Butylbenzene	9.99		ug/L	10.00		100	70-130	0.3	25	
Styrene	9.19		ug/L	10.00		92	70-130	8	25	
tert-Butylbenzene	9.76		ug/L	10.00		98	70-130	1	25	
Tertiary-amyl methyl ether	7.59		ug/L	10.00		76	70-130	19	25	
Tetrachloroethene	7.04		ug/L	10.00		70	70-130	3	25	
Tetrahydrofuran	9.03		ug/L	10.00		90	70-130	15	25	
Toluene	9.39		ug/L	10.00		94	70-130	0.3	25	
trans-1,2-Dichloroethene	9.84		ug/L	10.00		98	70-130	1	25	
trans-1,3-Dichloropropene	8.27		ug/L	10.00		83	70-130	7	25	
Trichloroethene	9.24		ug/L	10.00		92	70-130	0.1	25	
Trichlorofluoromethane	8.83		ug/L	10.00		88	70-130	2	25	
Vinyl Acetate	10.2		ug/L	10.00		102	70-130	5	25	
Vinyl Chloride	8.74		ug/L	10.00		87	70-130	1	25	
Xylene O	9.52		ug/L	10.00		95	70-130	4	25	
Xylene P,M	19.6		ug/L	20.00		98	70-130	1	25	
Xylenes (Total)	29.2		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0244		mg/L	0.02500		97	70-130			
Surrogate: 4-Bromofluorobenzene	0.0267		mg/L	0.02500		107	70-130			
Surrogate: Dibromofluoromethane	0.0262		mg/L	0.02500		105	70-130			
Surrogate: Toluene-d8	0.0257		mg/L	0.02500		103	70-130			



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave

ESS Laboratory Work Order: 1603703

**Notes and Definitions**

- U Analyte included in the analysis, but not detected
- CD- Continuing Calibration %Diff/Drift is below control limit (CD-).
- B- Blank Spike recovery is below lower control limit (B-).
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report



*CERTIFICATE OF ANALYSIS*

Client Name: Resource Controls  
Client Project ID: Bay Spring Ave

ESS Laboratory Work Order: 1603703

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/find/labs/analytical/ESS.pdf>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750

[http://www.ct.gov/dph/lib/dph/environmental\\_health/environmental\\_laboratories/pdf/OutOfStateCommercialLaboratories.pdf](http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf)

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002

<http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls>

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/Labcert/Labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006

[http://datamine2.state.nj.us/DEP\\_OPRA/OpraMain/pi\\_main?mode=pi\\_by\\_site&sort\\_order=PI\\_NAMEA&Select+a+Site:=58715](http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715)

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

[http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory\\_accreditation\\_program/590095](http://www.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095)



## ESS Laboratory Sample and Cooler Receipt Checklist

Client: Resource Controls - TB/MM

ESS Project ID: 1603703

Date Received: 3/29/2016

Shipped/Delivered Via: \_\_\_\_\_ Client \_\_\_\_\_

Project Due Date: 4/5/2016

Days for Project: 5 Day

- 1. Air bill manifest present?  No  
Air No.: NA
- 2. Were custody seals present?  No
- 3. Is radiation count <100 CPM?  Yes
- 4. Is a Cooler Present?  Yes  
Temp: 8.3 Iced with: Ice Pack
- 5. Was COC signed and dated by client?  Yes

- 6. Does COC match bottles?  Yes
- 7. Is COC complete and correct?  Yes
- 8. Were samples received intact?  Yes
- 9. Were labs informed about short holds & rushes? Yes / No / NA
- 10. Were any analyses received outside of hold time? Yes  No

11. Any Subcontracting needed? Yes /  No  
ESS Sample IDs: \_\_\_\_\_  
Analysis: \_\_\_\_\_  
TAT: \_\_\_\_\_

12. Were VOAs received?  Yes /  No  
a. Air bubbles in aqueous VOAs?  Yes /  No  
b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved?  Yes /  No  
a. If metals preserved upon receipt: Date: \_\_\_\_\_ Time: \_\_\_\_\_ By: \_\_\_\_\_  
b. Low Level VOAs brought to freezer: Date: \_\_\_\_\_ Time: \_\_\_\_\_ By: \_\_\_\_\_

Sample Receiving Notes:

\_\_\_\_\_

\_\_\_\_\_

14. Was there a need to contact Project Manager? Yes /  No  
a. Was there a need to contact the client? Yes /  No  
Who was contacted? \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ By: \_\_\_\_\_

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	21087	Yes	No	Yes	VOA Vial - HCl	HCL	
01	21092	Yes	No	Yes	VOA Vial - HCl	HCL	
01	21093	Yes	No	Yes	VOA Vial - HCl	HCL	
02	21086	Yes	No	Yes	VOA Vial - HCl	HCL	
02	21090	Yes	No	Yes	VOA Vial - HCl	HCL	
02	21091	Yes	No	Yes	VOA Vial - HCl	HCL	
03	21085	Yes	No	Yes	VOA Vial - HCl	HCL	
03	21088	Yes	No	Yes	VOA Vial - HCl	HCL	
03	21089	Yes	No	Yes	VOA Vial - HCl	HCL	

2nd Review  
Are barcode labels on correct containers?  Yes /  No

Completed By:  Date & Time: 3-29-16 1445

Reviewed By:  Date & Time: 3/29/16 1452

1603703  
Page 1 of 3

# CHAIN OF CUSTODY

**ESS Laboratory**  
 Division of Thielsch Engineering, Inc.  
 185 Frances Avenue, Cranston, RI 02910-2211  
 Tel. (401) 461-7181 Fax (401) 461-4486  
 www.esslaboratory.com

Turn Time:  Standard  Other  
 If faster than 5 days, prior approval by laboratory is required # \_\_\_\_\_  
 State where samples were collected from:  
 MA RI CT NH NJ NY ME Other  
 Is this project for any of the following: USACE Other Navy  
 MA-MCP \_\_\_\_\_

Reporting Limits: RI-6A  
 Electronic Deliverable: Yes  No \_\_\_\_\_  
 Format: Excel  Access \_\_\_\_\_ PDF  Other \_\_\_\_\_

ESS LAB PROJECT ID: 1603703

Co. Name	Project #	Project Name (20 Char. or less)	Type of Containers	Number of Containers	Type of Containers	Circle and/or Write Required Analysis																						
ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX	Sample Identification (20 Char. or less)	Pres Code	8260 VOA	8021 VPH	8015 GRO	8100 DRO	EPH	EPH	EPH	w/o PAHs w/PAHs 4 Detect	8081 PCB	8082 Pesticides	8270 PAH	8270 SVOA	R CRA5	R CRA8	PP13	TAL23	TCLP-R CRA8 NBC7	MCP-METALS (13)	METALS (13) w/Hg		
1	3/29/16	12:45		X	GW	MW-105	2	X																				
2	3/29/16	12:55		X	GW	MW-3	2	X																				
3	3/29/16	14:00		X	GW	MW-5	2	X																				

Container Type: P-Poly G-Glass S-Sterile V-VOA Matrix: S-Soil SD-Solid D-Sludge WW-Waste Water GW-Ground Water SW-Surface Water DW-Drinking Water O-Oil W-Wipes F-Filters  
 Cooler Present:  Yes  No Internal Use Only  
 Seals Intact:  Yes  No NA:  [ ] Pickup  
 Cooler Temp: 8.3 °C PAES 3/29/16 [ ] Technician  
 Preservation Code: 1-NP, 2-HCl, 3-H<sub>2</sub>SO<sub>4</sub>, 4-HNO<sub>3</sub>, 5-NaOH, 6-MeOH, 7-Asorbic Acid, 8-ZnAct, 9-  
 Sampled by: BCC  
 Comments:  
 Relinquished by: (Signature) \_\_\_\_\_ Date/Time 3/29/16 14:30  
 Received by: (Signature) \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Relinquished by: (Signature) \_\_\_\_\_ Date/Time \_\_\_\_\_  
 Received by: (Signature) \_\_\_\_\_ Date/Time \_\_\_\_\_

\*By circling MA-MCP, client acknowledges samples were collected in accordance with MADEP CAM VII A  
 Please fax all changes to Chain of Custody in writing.  
 1 (White) Lab Copy 2 (Yellow) Client Receipt  
 10/26/04 A

**ATTACHMENT F**

**Additional Limitations**

## ADDITIONAL LIMITATIONS

1. The observations described in this Report were made under the conditions stated herein. The conclusions presented in the Report are based solely upon the services described therein and not on scientific tasks or procedures beyond the scope of described services or the time and budgetary constraints imposed by Client. The work described in the Report was carried out in accordance with our Proposal and Associated Statement of Standard Terms and Conditions.
2. In preparing the Report, Resource Controls has relied on certain information provided by state and local officials and other parties referenced therein and on information contained in the files of state and/or local agencies available to Resource Controls at the time of the site evaluation. Although there may have been some degree of overlap in the information provided by the various sources, Resource Controls did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this site assessment.
3. Observations and explorations were made of the site as indicated within the Report. Where access to portions of the site were unavailable or limited, Resource Controls renders no opinion as to the presence of hazardous materials, asbestos, lead paint or oil, or to the presence of indirect evidence relating to the same, in that portion of the site or structure. In addition, Resource Controls renders no opinion as to the presence of hazardous materials, lead paint, oil, PCBs or asbestos or to the presence of indirect evidence relating to hazardous materials, oil, lead paint or asbestos, where direct observation of the interior walls, floor, or ceiling of a structure on a site was obstructed by objects or coverings on or over these structures.
4. The purpose of this Report was to assess the characteristics of the subject site with respect to the possible presence in the environment of hazardous materials as defined within the project contract. No specific attempt was made to check the regulatory compliance of present or past owners or operators of the site with federal, state or local laws and regulations, environmental or otherwise.
5. Except as noted within the text of this Report, no quantitative laboratory testing was performed as part of this evaluation. Where such analyses have been conducted by an outside laboratory, Resource Controls has relied upon the data provided and has not conducted an independent third party evaluation of the reliability of this data.
6. Any chemical analyses performed for specific parameters during the course of studies have been used, in part, as a basis for determining the areas of environmental concern. Additional chemical constituents not searched for may be present at the site. Defined areas of environmental concern do not cover the potential additional constituents.
7. Governmental agencies' interpretations, requirements and enforcement policies may impact the type and scope of any site remediation required for a site. In addition, statutes, rules and regulations may be legislatively changed and inter-agency and intra-agency policies may be changed from present practice. If such changes occur, it may be necessary to re-evaluate their impact on the scope of any site remediation required.
8. Any water level readings made in the test pits, borings and/or wells and were made under the conditions stated on the logs. This data may have been reviewed and interpretations have been made in the text of this Report. However, it must be noted that fluctuations in the level of groundwater may occur due to variations in rainfall, temperature and other factors different from those prevailing at the time measurements were made.
9. Any and all cost estimates or opinions presented are based on Resource Controls opinion of most probable costs and are based on information available at the time of the estimate. Such estimates may vary from actual contract values based on many market and engineering variables beyond the control of Resource Controls. No warranty or guarantee is offered on the accuracy or validity of the estimates provided.