Columbia Analytical Services, Inc.
1317 S. 13th Avenue, Kelso, WA 98626 360.577.7222 360.636.1068 (fax) www.caslab.com

March 28, 2011 Analytical Report for Service Request No: K1100692

Melissa Kleven
Exponent
15375 Southeast 30th Place, Suite 250
Bellevue, WA 98007

RE: Heglar Kronquist/0907194.000.0901

Dear Melissa:

Enclosed are the revised report pages for the samples submitted to our laboratory on January 26, 2011. For your reference, these analyses have been assigned our service request number K1100692.

The Volatile Organics report (EPA Method 624) is modified by adding Xylenes to the analyte list.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3266. You may also contact me via Email at MShelton@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Mike Shelton

Mike Shelton
Project Chemist

MS/lb

REVISED
12:26 pm, Mar 30, 2011

Organic Analysis:
Volatile Organic Compounds

Summary Package

Sample and QC Results

REVISED
12:27 pm, Mar 30, 2011

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692

Cover Page - Organic Analysis Data Package
Volatile Organic Compounds

Sample Name	Lab Code	Date Collected	Date Received
MW-3	K1100692-001	01/25/2011	01/26/2011
MW-7	K1100692-002	01/25/2011	01/26/2011
EB-012511	K1100692-003	01/25/2011	01/26/2011
Trip Blank	K1100692-004	01/25/2011	01/26/2011

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: K Lee Name: K Lee

Date: 3/28/11 Title: Chemist

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	01/25/2011
Sample Matrix:	Water	**Date Received:**	01/26/2011

Volatile Organic Compounds

Sample Name:	MW-3	**Units:**	ug/L
Lab Code:	K1100692-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Vinyl Chloride	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Bromomethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Chloroethane	ND	U	5.0	0.25	1	01/28/11	01/28/11	KWG1100975	
Trichlorofluoromethane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethene	ND	U	5.0	0.18	1	01/28/11	01/28/11	KWG1100975	
Methylene Chloride	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
trans-1,2-Dichloroethene	ND	U	5.0	0.21	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Chloroform	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Carbon Tetrachloride	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Benzene	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloroethane (EDC)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
Trichloroethene (TCE)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloropropane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Bromodichloromethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
2-Chloroethyl Vinyl Ether	ND	U	10	0.31	1	01/28/11	01/28/11	KWG1100975	
trans-1,3-Dichloropropene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Toluene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
cis-1,3-Dichloropropene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
1,1,2-Trichloroethane	ND	U	5.0	0.23	1	01/28/11	01/28/11	KWG1100975	
Tetrachloroethene (PCE)	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Dibromochloromethane	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Chlorobenzene	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Ethylbenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
m,p-Xylenes	ND	U	5.0	0.29	1	01/28/11	01/28/11	KWG1100975	
o-Xylene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Bromoform	ND	U	5.0	0.43	1	01/28/11	01/28/11	KWG1100975	
1,1,2,2-Tetrachloroethane	ND	U	5.0	0.28	1	01/28/11	01/28/11	KWG1100975	
1,3-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,4-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichlorobenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
Acrolein†	ND	U	50	2.9	1	01/28/11	01/28/11	KWG1100975	

Comments:

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	01/25/2011
Sample Matrix:	Water	**Date Received:**	01/26/2011

Volatile Organic Compounds

Sample Name:	MW-3	**Units:**	ug/L
Lab Code:	K1100692-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acrylonitrile†	ND	U	10	0.43	1	01/28/11	01/28/11	KWG1100975	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	107	72-122	01/28/11	Acceptable
4-Bromofluorobenzene	100	70-120	01/28/11	Acceptable
Dibromofluoromethane	106	61-121	01/28/11	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	01/25/2011
Sample Matrix:	Water	**Date Received:**	01/26/2011

Volatile Organic Compounds

Sample Name:	MW-7	**Units:**	ug/L
Lab Code:	K1100692-002	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Vinyl Chloride	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Bromomethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Chloroethane	ND	U	5.0	0.25	1	01/28/11	01/28/11	KWG1100975	
Trichlorofluoromethane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethene	ND	U	5.0	0.18	1	01/28/11	01/28/11	KWG1100975	
Methylene Chloride	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
trans-1,2-Dichloroethene	ND	U	5.0	0.21	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Chloroform	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Carbon Tetrachloride	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Benzene	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloroethane (EDC)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
Trichloroethene (TCE)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloropropane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Bromodichloromethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
2-Chloroethyl Vinyl Ether	ND	U	10	0.31	1	01/28/11	01/28/11	KWG1100975	
trans-1,3-Dichloropropene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Toluene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
cis-1,3-Dichloropropene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
1,1,2-Trichloroethane	ND	U	5.0	0.23	1	01/28/11	01/28/11	KWG1100975	
Tetrachloroethene (PCE)	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Dibromochloromethane	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Chlorobenzene	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Ethylbenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
m,p-Xylenes	ND	U	5.0	0.29	1	01/28/11	01/28/11	KWG1100975	
o-Xylene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Bromoform	ND	U	5.0	0.43	1	01/28/11	01/28/11	KWG1100975	
1,1,2,2-Tetrachloroethane	ND	U	5.0	0.28	1	01/28/11	01/28/11	KWG1100975	
1,3-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,4-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichlorobenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
Acrolein†	ND	U	50	2.9	1	01/28/11	01/28/11	KWG1100975	

Comments:

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901
Sample Matrix: Water

Service Request: K1100692
Date Collected: 01/25/2011
Date Received: 01/26/2011

Volatile Organic Compounds

Sample Name: MW-7
Lab Code: K1100692-002

Extraction Method: METHOD
Analysis Method: 624

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acrylonitrile†	ND	U	10	0.43	1	01/28/11	01/28/11	KWG1100975	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	107	72-122	01/28/11	Acceptable
4-Bromofluorobenzene	95	70-120	01/28/11	Acceptable
Dibromofluoromethane	105	61-121	01/28/11	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901
Sample Matrix: Water

Service Request: K1100692
Date Collected: 01/25/2011
Date Received: 01/26/2011

Volatile Organic Compounds

Sample Name: EB-012511
Lab Code: K1100692-003

Units: ug/L
Basis: NA

Extraction Method: METHOD
Analysis Method: 624

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Vinyl Chloride	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Bromomethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Chloroethane	ND	U	5.0	0.25	1	01/28/11	01/28/11	KWG1100975	
Trichlorofluoromethane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethene	ND	U	5.0	0.18	1	01/28/11	01/28/11	KWG1100975	
Methylene Chloride	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
trans-1,2-Dichloroethene	ND	U	5.0	0.21	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Chloroform	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Carbon Tetrachloride	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Benzene	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloroethane (EDC)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
Trichloroethene (TCE)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloropropane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Bromodichloromethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
2-Chloroethyl Vinyl Ether	ND	U	10	0.31	1	01/28/11	01/28/11	KWG1100975	
trans-1,3-Dichloropropene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Toluene	**0.28**	J	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
cis-1,3-Dichloropropene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
1,1,2-Trichloroethane	ND	U	5.0	0.23	1	01/28/11	01/28/11	KWG1100975	
Tetrachloroethene (PCE)	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Dibromochloromethane	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Chlorobenzene	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Ethylbenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
m,p-Xylenes	ND	U	5.0	0.29	1	01/28/11	01/28/11	KWG1100975	
o-Xylene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Bromoform	ND	U	5.0	0.43	1	01/28/11	01/28/11	KWG1100975	
1,1,2,2-Tetrachloroethane	ND	U	5.0	0.28	1	01/28/11	01/28/11	KWG1100975	
1,3-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,4-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichlorobenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
Acrolein†	ND	U	50	2.9	1	01/28/11	01/28/11	KWG1100975	

Comments:

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901
Sample Matrix: Water

Service Request: K1100692
Date Collected: 01/25/2011
Date Received: 01/26/2011

Volatile Organic Compounds

Sample Name: EB-012511
Lab Code: K1100692-003

Units: ug/L
Basis: NA

Extraction Method: METHOD
Analysis Method: 624

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acrylonitrile†	ND	U	10	0.43	1	01/28/11	01/28/11	KWG1100975	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	106	72-122	01/28/11	Acceptable
4-Bromofluorobenzene	98	70-120	01/28/11	Acceptable
Dibromofluoromethane	107	61-121	01/28/11	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	01/25/2011
Sample Matrix:	Water	**Date Received:**	01/26/2011

Volatile Organic Compounds

Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	K1100692-004	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Vinyl Chloride	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Bromomethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Chloroethane	ND	U	5.0	0.25	1	01/28/11	01/28/11	KWG1100975	
Trichlorofluoromethane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethene	ND	U	5.0	0.18	1	01/28/11	01/28/11	KWG1100975	
Methylene Chloride	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
trans-1,2-Dichloroethene	ND	U	5.0	0.21	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Chloroform	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Carbon Tetrachloride	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Benzene	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloroethane (EDC)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
Trichloroethene (TCE)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloropropane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Bromodichloromethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
2-Chloroethyl Vinyl Ether	ND	U	10	0.31	1	01/28/11	01/28/11	KWG1100975	
trans-1,3-Dichloropropene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Toluene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
cis-1,3-Dichloropropene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
1,1,2-Trichloroethane	ND	U	5.0	0.23	1	01/28/11	01/28/11	KWG1100975	
Tetrachloroethene (PCE)	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Dibromochloromethane	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Chlorobenzene	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Ethylbenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
m,p-Xylenes	ND	U	5.0	0.29	1	01/28/11	01/28/11	KWG1100975	
o-Xylene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Bromoform	ND	U	5.0	0.43	1	01/28/11	01/28/11	KWG1100975	
1,1,2,2-Tetrachloroethane	ND	U	5.0	0.28	1	01/28/11	01/28/11	KWG1100975	
1,3-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,4-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichlorobenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
Acrolein†	ND	U	50	2.9	1	01/28/11	01/28/11	KWG1100975	

Comments:

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	01/25/2011
Sample Matrix:	Water	**Date Received:**	01/26/2011

Volatile Organic Compounds

Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	K1100692-004	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acrylonitrile†	ND	U	10	0.43	1	01/28/11	01/28/11	KWG1100975	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	107	72-122	01/28/11	Acceptable
4-Bromofluorobenzene	98	70-120	01/28/11	Acceptable
Dibromofluoromethane	106	61-121	01/28/11	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1100975-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Vinyl Chloride	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Bromomethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Chloroethane	ND	U	5.0	0.25	1	01/28/11	01/28/11	KWG1100975	
Trichlorofluoromethane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethene	ND	U	5.0	0.18	1	01/28/11	01/28/11	KWG1100975	
Methylene Chloride	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
trans-1,2-Dichloroethene	ND	U	5.0	0.21	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Chloroform	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Carbon Tetrachloride	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Benzene	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloroethane (EDC)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
Trichloroethene (TCE)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloropropane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Bromodichloromethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
2-Chloroethyl Vinyl Ether	ND	U	10	0.31	1	01/28/11	01/28/11	KWG1100975	
trans-1,3-Dichloropropene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Toluene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
cis-1,3-Dichloropropene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
1,1,2-Trichloroethane	ND	U	5.0	0.23	1	01/28/11	01/28/11	KWG1100975	
Tetrachloroethene (PCE)	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Dibromochloromethane	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Chlorobenzene	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Ethylbenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
m,p-Xylenes	ND	U	5.0	0.29	1	01/28/11	01/28/11	KWG1100975	
o-Xylene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Bromoform	ND	U	5.0	0.43	1	01/28/11	01/28/11	KWG1100975	
1,1,2,2-Tetrachloroethane	ND	U	5.0	0.28	1	01/28/11	01/28/11	KWG1100975	
1,3-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,4-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichlorobenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
Acrolein†	ND	U	50	2.9	1	01/28/11	01/28/11	KWG1100975	

Comments:

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1100975-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acrylonitrile†	ND	U	10	0.43	1	01/28/11	01/28/11	KWG1100975	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	105	72-122	01/28/11	Acceptable
4-Bromofluorobenzene	102	70-120	01/28/11	Acceptable
Dibromofluoromethane	106	61-121	01/28/11	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901
Sample Matrix: Water

Service Request: K1100692

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 624

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
MW-3	K1100692-001	107	100	106
MW-7	K1100692-002	107	95	105
EB-012511	K1100692-003	106	98	107
Trip Blank	K1100692-004	107	98	106
Batch QC	K1100710-005	104	98	105
Method Blank	KWG1100975-4	105	102	106
Batch QCMS	KWG1100975-1	109	99	105
Batch QCDMS	KWG1100975-2	107	102	102
Lab Control Sample	KWG1100975-3	109	102	106

Surrogate Recovery Control Limits (%)

Sur1 =	Toluene-d8	72-122
Sur2 =	4-Bromofluorobenzene	70-120
Sur3 =	Dibromofluoromethane	61-121

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Date Analyzed: 01/28/2011
Time Analyzed: 13:57

Internal Standard Area and RT Summary
Volatile Organic Compounds

File ID: J:\MS23\DATA\012811\0128F003.D
Instrument ID: MS23
Analysis Method: 624

Lab Code: KWG1100972-2
Analysis Lot: KWG1100972

		Fluorobenzene		1,4-Dichlorobenzene-d4		Chlorobenzene-d5	
		Area	RT	Area	RT	Area	RT
	Results ==>	396,047	5.76	150,722	11.61	181,960	9.20
	Upper Limit ==>	792,094	6.26	301,444	12.11	363,920	9.70
	Lower Limit ==>	198,024	5.26	75,361	11.11	90,980	8.70
	ICAL Result ==>	486,875	5.77	169,109	11.61	202,840	9.20
Associated Analyses							
Lab Control Sample	KWG1100975-3	394,117	5.76	152,274	11.61	186,471	9.20
Batch QCMS	KWG1100975-1	389,902	5.76	147,319	11.61	182,444	9.20
Batch QCDMS	KWG1100975-2	391,348	5.76	149,224	11.61	182,287	9.20
Method Blank	KWG1100975-4	399,883	5.76	148,744	11.61	184,783	9.20
Batch QC	K1100710-005	387,417	5.76	142,063	11.61	179,925	9.20
MW-3	K1100692-001	391,055	5.76	146,542	11.61	182,403	9.20
MW-7	K1100692-002	392,446	5.76	146,099	11.61	185,618	9.20
EB-012511	K1100692-003	384,675	5.76	143,516	11.61	184,679	9.20
Trip Blank	K1100692-004	378,436	5.76	143,210	11.61	179,573	9.20

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Extracted:**	01/28/2011
Sample Matrix:	Water	**Date Analyzed:**	01/28/2011

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1100710-005	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624	**Extraction Lot:**	KWG1100975

Analyte Name	Sample Result	Batch QCMS KWG1100975-1 Matrix Spike			Batch QCDMS KWG1100975-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
1,1-Dichloroethene	ND	12.5	10.0	125	12.1	10.0	121	64-151	4	30
Benzene	ND	12.3	10.0	123	11.8	10.0	118	61-145	5	30
Trichloroethene (TCE)	ND	11.9	10.0	119	11.3	10.0	113	23-193	6	30
Toluene	0.13	12.4	10.0	123	12.0	10.0	119	69-137	3	30
Chlorobenzene	ND	10.7	10.0	107	10.6	10.0	106	76-128	2	30
1,2-Dichlorobenzene	ND	10.9	10.0	109	10.7	10.0	107	71-135	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Extracted:**	01/28/2011
Sample Matrix:	Water	**Date Analyzed:**	01/28/2011

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	624	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1100975

	Lab Control Sample KWG1100975-3 Lab Control Spike			
Analyte Name	**Result**	**Expected**	**%Rec**	**%Rec Limits**
Chloromethane	11.5	10.0	115	66-139
Vinyl Chloride	10.9	10.0	109	71-136
Bromomethane	11.6	10.0	116	61-154
Chloroethane	11.1	10.0	111	69-130
Trichlorofluoromethane	10.0	10.0	100	65-127
1,1-Dichloroethene	11.7	10.0	117	79-147
Methylene Chloride	11.2	10.0	112	67-144
trans-1,2-Dichloroethene	11.6	10.0	116	78-140
1,1-Dichloroethane	11.5	10.0	115	79-135
Chloroform	12.0	10.0	120	81-136
1,1,1-Trichloroethane (TCA)	11.4	10.0	114	77-139
Carbon Tetrachloride	10.9	10.0	109	69-144
Benzene	11.8	10.0	118	81-140
1,2-Dichloroethane (EDC)	12.4	10.0	124	74-140
Trichloroethene (TCE)	11.2	10.0	112	81-133
1,2-Dichloropropane	11.5	10.0	115	80-134
Bromodichloromethane	11.7	10.0	117	80-136
2-Chloroethyl Vinyl Ether	12.0	10.0	120	61-141
trans-1,3-Dichloropropene	8.72	10.0	87	73-122
Toluene	11.9	10.0	119	80-139
cis-1,3-Dichloropropene	11.0	10.0	110	77-137
1,1,2-Trichloroethane	10.7	10.0	107	87-129
Tetrachloroethene (PCE)	10.2	10.0	102	82-129
Dibromochloromethane	10.2	10.0	102	82-128
Chlorobenzene	10.5	10.0	105	87-126
Ethylbenzene	10.2	10.0	102	86-128
m,p-Xylenes	20.8	20.0	104	85-129
o-Xylene	10.4	10.0	104	89-125
Bromoform	9.45	10.0	95	61-144
1,1,2,2-Tetrachloroethane	11.6	10.0	116	78-144
1,3-Dichlorobenzene	10.9	10.0	109	78-142
1,4-Dichlorobenzene	10.9	10.0	109	77-144
1,2-Dichlorobenzene	10.7	10.0	107	77-143
Acrolein	110	100	110	27-200
Acrylonitrile	12.0	10.0	120	82-138

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Extracted:**	01/28/2011
Sample Matrix:	Water	**Date Analyzed:**	01/28/2011
		Time Analyzed:	16:36

Method Blank Summary
Volatile Organic Compounds

Sample Name:	Method Blank	**File ID:**	J:\MS23\DATA\012811\0128F007.D
Lab Code:	KWG1100975-4	**Instrument ID:**	MS23
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624	**Extraction Lot:**	KWG1100975

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1100975-3	J:\MS23\DATA\012811\0128F004.D	01/28/11	14:26
Batch QCMS	KWG1100975-1	J:\MS23\DATA\012811\0128F005.D	01/28/11	15:39
Batch QCDMS	KWG1100975-2	J:\MS23\DATA\012811\0128F006.D	01/28/11	16:07
Batch QC	K1100710-005	J:\MS23\DATA\012811\0128F011.D	01/28/11	18:31
MW-3	K1100692-001	J:\MS23\DATA\012811\0128F013.D	01/28/11	19:29
MW-7	K1100692-002	J:\MS23\DATA\012811\0128F014.D	01/28/11	19:57
EB-012511	K1100692-003	J:\MS23\DATA\012811\0128F015.D	01/28/11	20:26
Trip Blank	K1100692-004	J:\MS23\DATA\012811\0128F016.D	01/28/11	20:55

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Extracted:**	01/28/2011
Sample Matrix:	Water	**Date Analyzed:**	01/28/2011
		Time Analyzed:	14:26

Lab Control Sample Summary
Volatile Organic Compounds

Sample Name:	Lab Control Sample	**File ID:**	J:\MS23\DATA\012811\0128F004.D
Lab Code:	KWG1100975-3	**Instrument ID:**	MS23
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624	**Extraction Lot:**	KWG1100975

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Batch QCMS	KWG1100975-1	J:\MS23\DATA\012811\0128F005.D	01/28/11	15:39
Batch QCDMS	KWG1100975-2	J:\MS23\DATA\012811\0128F006.D	01/28/11	16:07
Method Blank	KWG1100975-4	J:\MS23\DATA\012811\0128F007.D	01/28/11	16:36
Batch QC	K1100710-005	J:\MS23\DATA\012811\0128F011.D	01/28/11	18:31
MW-3	K1100692-001	J:\MS23\DATA\012811\0128F013.D	01/28/11	19:29
MW-7	K1100692-002	J:\MS23\DATA\012811\0128F014.D	01/28/11	19:57
EB-012511	K1100692-003	J:\MS23\DATA\012811\0128F015.D	01/28/11	20:26
Trip Blank	K1100692-004	J:\MS23\DATA\012811\0128F016.D	01/28/11	20:55

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Date Analyzed: 01/28/2011
Time Analyzed: 13:28

Tune Summary
Volatile Organic Compounds

File ID: J:\MS23\DATA\012811\0128F002.D
Instrument ID: MS23
Column:

Analysis Method: 624
Analysis Lot: KWG1100972

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	25.5	10507	PASS
75	95	30	60	58.0	23949	PASS
95	95	100	100	100.0	41258	PASS
96	95	5	9	7.5	3101	PASS
173	174	0	2	0.4	122	PASS
174	95	50	120	69.9	28840	PASS
175	174	5	9	5.3	1523	PASS
176	174	95	101	96.8	27917	PASS
177	176	5	9	7.1	1978	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1100972-2	J:\MS23\DATA\012811\0128F003.D	01/28/2011	13:57	
Lab Control Sample	KWG1100975-3	J:\MS23\DATA\012811\0128F004.D	01/28/2011	14:26	
Batch QCMS	KWG1100975-1	J:\MS23\DATA\012811\0128F005.D	01/28/2011	15:39	
Batch QCDMS	KWG1100975-2	J:\MS23\DATA\012811\0128F006.D	01/28/2011	16:07	
Method Blank	KWG1100975-4	J:\MS23\DATA\012811\0128F007.D	01/28/2011	16:36	
Batch QC	K1100710-005	J:\MS23\DATA\012811\0128F011.D	01/28/2011	18:31	
MW-3	K1100692-001	J:\MS23\DATA\012811\0128F013.D	01/28/2011	19:29	
MW-7	K1100692-002	J:\MS23\DATA\012811\0128F014.D	01/28/2011	19:57	
EB-012511	K1100692-003	J:\MS23\DATA\012811\0128F015.D	01/28/2011	20:26	
Trip Blank	K1100692-004	J:\MS23\DATA\012811\0128F016.D	01/28/2011	20:55	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Calibration Date: 01/12/2011

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL10216
Instrument ID: MS23

Column: MS

Level ID	File ID
A	J:\MS23\DATA\011211\0112F005.D
B	J:\MS23\DATA\011211\0112F006.D
C	J:\MS23\DATA\011211\0112F007.D
D	J:\MS23\DATA\011211\0112F008.D
E	J:\MS23\DATA\011211\0112F009.D
F	J:\MS23\DATA\011211\0112F010.D
G	J:\MS23\DATA\011211\0112F011.D

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Chloromethane	A	0.50	0.438	B	1.0	0.371	C	5.0	0.392	D	10	0.479	E	40	0.394
	F	80	0.423	G	120	0.442									
Vinyl Chloride	A	0.50	0.359	B	1.0	0.373	C	5.0	0.416	D	10	0.437	E	40	0.434
	F	80	0.434	G	120	0.428									
Bromomethane	A	0.50	0.0820	B	1.0	0.0966	C	5.0	0.100	D	10	0.155	E	40	0.178
	F	80	0.193	G	120	0.188									
Chloroethane	A	0.50	0.0746	B	1.0	0.0627	C	5.0	0.0674	D	10	0.0721	E	40	0.0676
	F	80	0.0666	G	120	0.0657									
Trichlorofluoromethane	A	0.50	0.427	B	1.0	0.454	C	5.0	0.524	D	10	0.508	E	40	0.525
	F	80	0.500	G	120	0.471									
1,1-Dichloroethene	A	0.50	0.198	B	1.0	0.186	C	5.0	0.213	D	10	0.206	E	40	0.219
	F	80	0.215	G	120	0.210									
Methylene Chloride	A	0.50	0.323	B	1.0	0.274	C	5.0	0.250	D	10	0.259	E	40	0.246
	F	80	0.248	G	120	0.249									
trans-1,2-Dichloroethene	A	0.50	0.235	B	1.0	0.228	C	5.0	0.253	D	10	0.255	E	40	0.264
	F	80	0.263	G	120	0.260									
1,1-Dichloroethane	A	0.50	0.445	B	1.0	0.463	C	5.0	0.515	D	10	0.525	E	40	0.527
	F	80	0.525	G	120	0.524									
Chloroform	A	0.50	0.429	B	1.0	0.430	C	5.0	0.454	D	10	0.470	E	40	0.471
	F	80	0.473	G	120	0.471									
1,1,1-Trichloroethane (TCA)	A	0.50	0.312	B	1.0	0.300	C	5.0	0.359	D	10	0.371	E	40	0.397
	F	80	0.410	G	120	0.412									
Carbon Tetrachloride	A	0.50	0.209	B	1.0	0.208	C	5.0	0.236	D	10	0.250	E	40	0.283
	F	80	0.307	G	120	0.319									
Benzene	A	0.50	0.981	B	1.0	1.01	C	5.0	1.08	D	10	1.10	E	40	1.10
	F	80	1.09	G	120	1.08									
1,2-Dichloroethane (EDC)	A	0.50	0.315	B	1.0	0.337	C	5.0	0.354	D	10	0.366	E	40	0.359
	F	80	0.356	G	120	0.355									
Trichloroethene (TCE)	A	0.50	0.245	B	1.0	0.243	C	5.0	0.262	D	10	0.264	E	40	0.269
	F	80	0.271	G	120	0.274									

Results flagged with an asterisk (*) indicate values outside control criteria.

† **SPCC Compound**

‡ **CCC Compound**

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Calibration Date: 01/12/2011

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL10216
Instrument ID: MS23

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
1,2-Dichloropropane	A	0.50	0.263	B	1.0	0.272	C	5.0	0.275	D	10	0.279	E	40	0.285
	F	80	0.284	G	120	0.285									
Bromodichloromethane	A	0.50	0.262	B	1.0	0.251	C	5.0	0.274	D	10	0.292	E	40	0.316
	F	80	0.327	G	120	0.334									
2-Chloroethyl Vinyl Ether	A	0.50	0.0991	B	1.0	0.0909	C	5.0	0.103	D	10	0.120	E	40	0.118
	F	80	0.121	G	120	0.122									
trans-1,3-Dichloropropene	A	0.50	0.567	B	1.0	0.611	C	5.0	0.675	D	10	0.705	E	40	0.799
	F	80	0.832	G	120	0.828									
Toluene	A	0.50	0.547	B	1.0	0.578	C	5.0	0.640	D	10	0.655	E	40	0.659
	F	80	0.659	G	120	0.658									
cis-1,3-Dichloropropene	A	0.50	0.284	B	1.0	0.314	C	5.0	0.357	D	10	0.374	E	40	0.399
	F	80	0.417	G	120	0.423									
1,1,2-Trichloroethane	A	0.50	0.306	B	1.0	0.338	C	5.0	0.352	D	10	0.366	E	40	0.368
	F	80	0.369	G	120	0.360									
Tetrachloroethene (PCE)	A	0.50	0.364	B	1.0	0.383	C	5.0	0.457	D	10	0.432	E	40	0.470
	F	80	0.474	G	120	0.468									
Dibromochloromethane	A	0.50	0.303	B	1.0	0.292	C	5.0	0.319	D	10	0.346	E	40	0.406
	F	80	0.444	G	120	0.450									
Chlorobenzene	A	0.50	1.39	B	1.0	1.46	C	5.0	1.53	D	10	1.57	E	40	1.60
	F	80	1.60	G	120	1.55									
Ethylbenzene	A	0.50	0.699	B	1.0	0.754	C	5.0	0.851	D	10	0.863	E	40	0.910
	F	80	0.915	G	120	0.898									
m,p-Xylenes	A	1.0	0.815	B	2.0	0.935	C	10	1.05	D	20	1.09	E	80	1.13
	F	160	1.13	G	240	1.12									
o-Xylene	A	0.50	0.779	B	1.0	0.864	C	5.0	0.989	D	10	1.03	E	40	1.08
	F	80	1.08	G	120	1.05									
Bromoform	A	0.50	0.157	B	1.0	0.115	C	5.0	0.130	D	10	0.139	E	40	0.176
	F	80	0.204	G	120	0.213									
1,1,2,2-Tetrachloroethane	A	0.50	0.537	B	1.0	0.475	C	5.0	0.461	D	10	0.480	E	40	0.476
	F	80	0.483	G	120	0.459									
1,3-Dichlorobenzene	A	0.50	1.20	B	1.0	1.25	C	5.0	1.31	D	10	1.33	E	40	1.36
	F	80	1.37	G	120	1.37									
1,4-Dichlorobenzene	A	0.50	1.25	B	1.0	1.32	C	5.0	1.33	D	10	1.37	E	40	1.37
	F	80	1.37	G	120	1.36									
1,2-Dichlorobenzene	A	0.50	1.13	B	1.0	1.23	C	5.0	1.17	D	10	1.21	E	40	1.21
	F	80	1.22	G	120	1.21									

Results flagged with an asterisk (*) indicate values outside control criteria.

† **SPCC Compound** ‡ **CCC Compound**

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Calibration Date: 01/12/2011

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL10216
Instrument ID: MS23

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Acrolein	A	10	0.0258	B	20	0.0277	C	100	0.0271	D	200	0.0253	E	800	0.0281
	F	1600	0.0272	G	2400	0.0254									
Acrylonitrile	A	1.0	0.0713	B	2.0	0.0595	C	10	0.0598	D	20	0.0632	E	80	0.0629
	F	160	0.0627	G	240	0.0634									
Toluene-d8	A	4.0	0.840	B	6.0	0.885	C	8.0	0.905	D	10	0.919	E	20	0.916
	F	40	0.912	G	60	0.951									
4-Bromofluorobenzene	A	4.0	0.719	B	6.0	0.755	C	8.0	0.783	D	10	0.795	E	20	0.794
	F	40	0.797	G	60	0.770									
Dibromofluoromethane	A	4.0	0.208	B	6.0	0.214	C	8.0	0.223	D	10	0.224	E	20	0.226
	F	40	0.229	G	60	0.233									

Results flagged with an asterisk (*) indicate values outside control criteria.

† **SPCC Compound** ‡ **CCC Compound**

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Calibration Date: 01/12/2011

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL10216
Instrument ID: MS23

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Chloromethane	TRG	AverageRF	% RSD	8.8		≤35	0.420		0.01
Vinyl Chloride	TRG	AverageRF	% RSD	7.9		≤35	0.411		0.01
Bromomethane	TRG	AverageRF	% RSD	33.6		≤35	0.142		0.01
Chloroethane	TRG	AverageRF	% RSD	5.9		≤35	0.0681		0.01
Trichlorofluoromethane	TRG	AverageRF	% RSD	7.7		≤35	0.487		0.01
1,1-Dichloroethene	MS	AverageRF	% RSD	5.5		≤35	0.207		0.01
Methylene Chloride	TRG	AverageRF	% RSD	10.5		≤35	0.264		0.01
trans-1,2-Dichloroethene	TRG	AverageRF	% RSD	5.6		≤35	0.251		0.01
1,1-Dichloroethane	TRG	AverageRF	% RSD	6.8		≤35	0.503		0.01
Chloroform	TRG	AverageRF	% RSD	4.3		≤35	0.457		0.01
1,1,1-Trichloroethane (TCA)	TRG	AverageRF	% RSD	12.4		≤35	0.366		0.01
Carbon Tetrachloride	TRG	AverageRF	% RSD	17.4		≤35	0.259		0.01
Benzene	MS	AverageRF	% RSD	4.5		≤35	1.06		0.01
1,2-Dichloroethane (EDC)	TRG	AverageRF	% RSD	4.9		≤35	0.349		0.01
Trichloroethene (TCE)	MS	AverageRF	% RSD	4.8		≤35	0.261		0.01
1,2-Dichloropropane	TRG	AverageRF	% RSD	3.0		≤35	0.278		0.01
Bromodichloromethane	TRG	AverageRF	% RSD	11.2		≤35	0.294		0.01
2-Chloroethyl Vinyl Ether	TRG	AverageRF	% RSD	11.5		≤35	0.111		0.01
trans-1,3-Dichloropropene	TRG	AverageRF	% RSD	14.8		≤35	0.717		0.01
Toluene	MS	AverageRF	% RSD	7.4		≤35	0.628		0.01
cis-1,3-Dichloropropene	TRG	AverageRF	% RSD	14.3		≤35	0.367		0.01
1,1,2-Trichloroethane	TRG	AverageRF	% RSD	6.5		≤35	0.351		0.01
Tetrachloroethene (PCE)	TRG	AverageRF	% RSD	10.4		≤35	0.435		0.01
Dibromochloromethane	TRG	AverageRF	% RSD	18.2		≤35	0.366		0.01
Chlorobenzene	MS	AverageRF	% RSD	5.1		≤35	1.53		0.01
Ethylbenzene	TRG	AverageRF	% RSD	9.9		≤35	0.841		0.01
m,p-Xylenes	TRG	AverageRF	% RSD	11.6		≤35	1.04		0.01
o-Xylene	TRG	AverageRF	% RSD	11.8		≤35	0.982		0.01
Bromoform	TRG	AverageRF	% RSD	22.9		≤35	0.162		0.01
1,1,2,2-Tetrachloroethane	TRG	AverageRF	% RSD	5.4		≤35	0.482		0.01
1,3-Dichlorobenzene	TRG	AverageRF	% RSD	5.1		≤35	1.31		0.01
1,4-Dichlorobenzene	TRG	AverageRF	% RSD	3.2		≤35	1.34		0.01
1,2-Dichlorobenzene	MS	AverageRF	% RSD	2.8		≤35	1.20		0.01
Acrolein	TRG	AverageRF	% RSD	4.3		≤35	0.0266		0.01
Acrylonitrile	TRG	AverageRF	% RSD	6.2		≤35	0.0633		0.01
Toluene-d8	SURR	AverageRF	% RSD	3.8		≤35	0.904		0.01
4-Bromofluorobenzene	SURR	AverageRF	% RSD	3.7		≤35	0.773		0.01
Dibromofluoromethane	SURR	AverageRF	% RSD	3.9		≤35	0.223		0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Calibration Date: 01/12/2011
Date Analyzed: 01/12/2011

Second Source Calibration Verification
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 624

Calibration ID: CAL10216
Units: PPB

File ID: J:\MS23\DATA\011211\0112F014.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Chloromethane	10	9.1	0.420	0.381	-9	NA	± 104 %	AverageRF
Vinyl Chloride	10	11	0.411	0.437	6	NA	± 96 %	AverageRF
Bromomethane	10	14	0.142	0.201	42	NA	± 86 %	AverageRF
Chloroethane	10	10	0.0681	0.0695	2	NA	± 62 %	AverageRF
Trichlorofluoromethane	10	9.2	0.487	0.446	-8	NA	± 52 %	AverageRF
1,1-Dichloroethene	10	12	0.207	0.241	17	NA	± 49 %	AverageRF
Methylene Chloride	10	11	0.264	0.281	6	NA	± 39 %	AverageRF
trans-1,2-Dichloroethene	10	11	0.251	0.288	15	NA	± 30 %	AverageRF
1,1-Dichloroethane	10	11	0.503	0.565	12	NA	± 27 %	AverageRF
Chloroform	10	11	0.457	0.516	13	NA	± 32 %	AverageRF
1,1,1-Trichloroethane (TCA)	10	11	0.366	0.419	15	NA	± 25 %	AverageRF
Carbon Tetrachloride	10	11	0.259	0.290	12	NA	± 27 %	AverageRF
Benzene	10	11	1.06	1.20	13	NA	± 36 %	AverageRF
1,2-Dichloroethane (EDC)	10	11	0.349	0.399	14	NA	± 32 %	AverageRF
Trichloroethene (TCE)	10	11	0.261	0.289	11	NA	± 33 %	AverageRF
1,2-Dichloropropane	10	11	0.278	0.306	10	NA	± 66 %	AverageRF
Bromodichloromethane	10	11	0.294	0.332	13	NA	± 34 %	AverageRF
2-Chloroethyl Vinyl Ether	10	11	0.111	0.122	10	NA	± 124 %	AverageRF
trans-1,3-Dichloropropene	10	11	0.717	0.758	6	NA	± 50 %	AverageRF
Toluene	10	11	0.628	0.708	13	NA	± 25 %	AverageRF
cis-1,3-Dichloropropene	10	11	0.367	0.415	13	NA	± 76 %	AverageRF
1,1,2-Trichloroethane	10	12	0.351	0.412	17	NA	± 29 %	AverageRF
Tetrachloroethene (PCE)	10	12	0.435	0.502	15	NA	± 26 %	AverageRF
Dibromochloromethane	10	11	0.366	0.414	13	NA	± 32 %	AverageRF
Chlorobenzene	10	11	1.53	1.72	13	NA	± 34 %	AverageRF
Ethylbenzene	10	11	0.841	0.950	13	NA	± 41 %	AverageRF
m,p-Xylenes	20	22	1.04	1.14	10	NA	± 40 %	AverageRF
o-Xylene	10	11	0.982	1.11	13	NA	± 40 %	AverageRF
Bromoform	10	11	0.162	0.173	7	NA	± 29 %	AverageRF
1,1,2,2-Tetrachloroethane	10	11	0.482	0.551	14	NA	± 39 %	AverageRF
1,3-Dichlorobenzene	10	12	1.31	1.51	15	NA	± 27 %	AverageRF
1,4-Dichlorobenzene	10	12	1.34	1.56	17	NA	± 37 %	AverageRF
1,2-Dichlorobenzene	10	11	1.20	1.36	14	NA	± 37 %	AverageRF
Acrolein	100	94	0.0266	0.0250	-6	NA	± 80 %	AverageRF
Acrylonitrile	10	10	0.0633	0.0657	4	NA	± 40 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† **SPCC Compound** ‡ **CCC Compound**

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Date Analyzed: 01/28/2011

Continuing Calibration Verification Summary
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 624

Calibration Date: 01/12/2011
Calibration ID: CAL10216
Analysis Lot: KWG1100972
Units: PPB

File ID: J:\MS23\DATA\012811\0128F003.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Chloromethane	10	11	0.01	0.420	0.482	15	NA	± 104 %	AverageRF
Vinyl Chloride	10	11	0.01	0.411	0.438	7	NA	± 96 %	AverageRF
Bromomethane	10	9.1	0.01	0.142	0.129	-9	NA	± 86 %	AverageRF
Chloroethane	10	11	0.01	0.0681	0.0756	11	NA	± 62 %	AverageRF
Trichlorofluoromethane	10	11	0.01	0.487	0.558	15	NA	± 52 %	AverageRF
1,1-Dichloroethene	10	11	0.01	0.207	0.231	12	NA	± 49 %	AverageRF
Methylene Chloride	10	11	0.01	0.264	0.283	7	NA	± 39 %	AverageRF
trans-1,2-Dichloroethene	10	11	0.01	0.251	0.282	12	NA	± 30 %	AverageRF
1,1-Dichloroethane	10	11	0.01	0.503	0.571	13	NA	± 27 %	AverageRF
Chloroform	10	11	0.01	0.457	0.515	13	NA	± 32 %	AverageRF
1,1,1-Trichloroethane (TCA)	10	11	0.01	0.366	0.399	9	NA	± 25 %	AverageRF
Carbon Tetrachloride	10	10	0.01	0.259	0.267	3	NA	± 27 %	AverageRF
Benzene	10	11	0.01	1.06	1.20	13	NA	± 36 %	AverageRF
1,2-Dichloroethane (EDC)	10	12	0.01	0.349	0.402	15	NA	± 32 %	AverageRF
Trichloroethene (TCE)	10	11	0.01	0.261	0.289	11	NA	± 33 %	AverageRF
1,2-Dichloropropane	10	11	0.01	0.278	0.305	10	NA	± 66 %	AverageRF
Bromodichloromethane	10	11	0.01	0.294	0.328	12	NA	± 34 %	AverageRF
2-Chloroethyl Vinyl Ether	10	11	0.01	0.111	0.119	7	NA	± 124 %	AverageRF
trans-1,3-Dichloropropene	10	9.0	0.01	0.717	0.641	-11	NA	± 50 %	AverageRF
Toluene	10	11	0.01	0.628	0.704	12	NA	± 25 %	AverageRF
cis-1,3-Dichloropropene	10	11	0.01	0.367	0.388	6	NA	± 76 %	AverageRF
1,1,2-Trichloroethane	10	10	0.01	0.351	0.361	3	NA	± 29 %	AverageRF
Tetrachloroethene (PCE)	10	10	0.01	0.435	0.441	1	NA	± 26 %	AverageRF
Dibromochloromethane	10	9.5	0.01	0.366	0.348	-5	NA	± 32 %	AverageRF
Chlorobenzene	10	10	0.01	1.53	1.53	0	NA	± 34 %	AverageRF
Ethylbenzene	10	10	0.01	0.841	0.856	2	NA	± 41 %	AverageRF
m,p-Xylenes	20	21	0.01	1.04	1.06	3	NA	± 40 %	AverageRF
o-Xylene	10	10	0.01	0.982	0.987	1	NA	± 40 %	AverageRF
Bromoform	10	8.4	0.01	0.162	0.136	-16	NA	± 29 %	AverageRF
1,1,2,2-Tetrachloroethane	10	9.8	0.01	0.482	0.473	-2	NA	± 39 %	AverageRF
1,3-Dichlorobenzene	10	9.5	0.01	1.31	1.24	-5	NA	± 27 %	AverageRF
1,4-Dichlorobenzene	10	9.5	0.01	1.34	1.28	-5	NA	± 37 %	AverageRF
1,2-Dichlorobenzene	10	9.3	0.01	1.20	1.11	-7	NA	± 37 %	AverageRF
Acrolein	200	190	0.01	0.0266	0.0255	-4	NA	± 80 %	AverageRF
Acrylonitrile	20	23	0.01	0.0633	0.0717	13	NA	± 40 %	AverageRF
Toluene-d8	10	11	0.01	0.904	1.00	11	NA	± 30 %	AverageRF
4-Bromofluorobenzene	10	11	0.01	0.773	0.837	8	NA	± 30 %	AverageRF
Dibromofluoromethane	10	11	0.01	0.223	0.235	5	NA	± 30 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692

Analysis Run Log
Volatile Organic Compounds

Analysis Method: 624

Analysis Lot: KWG1100972
Instrument ID: MS23

File ID	Sample Name	Lab Code	Date Analysis Started	Start Time	Q	Date Analysis Finished	Finish Time
0128F002.D	GC/MS Tuning - Bromofluorobenzene	KWG1100972-1	1/28/2011	13:28		1/28/2011	13:43
0128F003.D	Continuing Calibration Verification	KWG1100972-2	1/28/2011	13:57		1/28/2011	14:12
0128F004.D	Lab Control Sample	KWG1100975-3	1/28/2011	14:26		1/28/2011	14:41
0128F005.D	Batch QCMS	KWG1100975-1	1/28/2011	15:39		1/28/2011	15:54
0128F006.D	Batch QCDMS	KWG1100975-2	1/28/2011	16:07		1/28/2011	16:22
0128F007.D	Method Blank	KWG1100975-4	1/28/2011	16:36		1/28/2011	16:51
0128F008.D	ZZZZZZ	ZZZZZZ	1/28/2011	17:05		1/28/2011	17:20
0128F009.D	ZZZZZZ	ZZZZZZ	1/28/2011	17:34		1/28/2011	17:49
0128F011.D	Batch QC	K1100710-005	1/28/2011	18:31		1/28/2011	18:46
0128F012.D	ZZZZZZ	ZZZZZZ	1/28/2011	19:00		1/28/2011	19:15
0128F013.D	MW-3	K1100692-001	1/28/2011	19:29		1/28/2011	19:44
0128F014.D	MW-7	K1100692-002	1/28/2011	19:57		1/28/2011	20:12
0128F015.D	EB-012511	K1100692-003	1/28/2011	20:26		1/28/2011	20:41
0128F016.D	Trip Blank	K1100692-004	1/28/2011	20:55		1/28/2011	21:10
0128F017.D	ZZZZZZ	ZZZZZZ	1/28/2011	21:24		1/28/2011	21:39
0128F018.D	ZZZZZZ	ZZZZZZ	1/28/2011	21:52		1/28/2011	22:07
0128F019.D	ZZZZZZ	ZZZZZZ	1/28/2011	22:21		1/28/2011	22:36
0128F020.D	ZZZZZZ	ZZZZZZ	1/28/2011	22:50		1/28/2011	23:05
0128F021.D	ZZZZZZ	ZZZZZZ	1/28/2011	23:19		1/28/2011	23:34

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901
Sample Matrix: Water

Service Request: K1100692
Date Extracted: 01/28/2011

Extraction Prep Log
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 624

Extraction Lot: KWG1100975
Level: Low

Sample Name	Lab Code	Date Collected	Date Received	Sample Amount	Final Volume	% Solids	Note
MW-3	K1100692-001	01/25/11	01/26/11	10ml	10ml	NA	
MW-7	K1100692-002	01/25/11	01/26/11	10ml	10ml	NA	
EB-012511	K1100692-003	01/25/11	01/26/11	10ml	10ml	NA	
Trip Blank	K1100692-004	01/25/11	01/26/11	10ml	10ml	NA	
Method Blank	KWG1100975-4	NA	NA	10ml	10ml	NA	
Batch QC	K1100710-005	NA	NA	10ml	10ml	NA	
Batch QCMS	KWG1100975-1	NA	NA	10ml	10ml	NA	
Batch QCDMS	KWG1100975-2	NA	NA	10ml	10ml	NA	
Lab Control Sample	KWG1100975-3	NA	NA	10ml	10ml	NA	

Results flagged with an asterisk (*) indicate the holding time was exceeded for the analysis

Organic Analysis:
Volatile Organic Compounds

Validation Package

REVISED
12:27 pm, Mar 30, 2011

Organic Analysis:
Volatile Organic Compounds

Validation Package

QC Reports

REVISED
12:27 pm, Mar 30, 2011

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901
Sample Matrix: Water

Service Request: K1100692

Surrogate Recovery Summary
Volatile Organic Compounds

Extraction Method: METHOD
Analysis Method: 624

Units: PERCENT
Level: Low

Sample Name	Lab Code	Sur1	Sur2	Sur3
MW-3	K1100692-001	107	100	106
MW-7	K1100692-002	107	95	105
EB-012511	K1100692-003	106	98	107
Trip Blank	K1100692-004	107	98	106
Batch QC	K1100710-005	104	98	105
Method Blank	KWG1100975-4	105	102	106
Batch QCMS	KWG1100975-1	109	99	105
Batch QCDMS	KWG1100975-2	107	102	102
Lab Control Sample	KWG1100975-3	109	102	106

Surrogate Recovery Control Limits (%)

Sur1	= Toluene-d8	72-122
Sur2	= 4-Bromofluorobenzene	70-120
Sur3	= Dibromofluoromethane	61-121

Results flagged with an asterisk (*) indicate values outside control criteria.
Results flagged with a pound (#) indicate the control criteria is not applicable.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Date Analyzed: 01/28/2011
Time Analyzed: 13:57

Internal Standard Area and RT Summary
Volatile Organic Compounds

File ID: J:\MS23\DATA\012811\0128F003.D
Instrument ID: MS23
Analysis Method: 624

Lab Code: KWG1100972-2
Analysis Lot: KWG1100972

		Fluorobenzene		1,4-Dichlorobenzene-d4		Chlorobenzene-d5	
		Area	**RT**	**Area**	**RT**	**Area**	**RT**
	Results ==>	396,047	5.76	150,722	11.61	181,960	9.20
	Upper Limit ==>	792,094	6.26	301,444	12.11	363,920	9.70
	Lower Limit ==>	198,024	5.26	75,361	11.11	90,980	8.70
	ICAL Result ==>	486,875	5.77	169,109	11.61	202,840	9.20
Associated Analyses							
Lab Control Sample	KWG1100975-3	394,117	5.76	152,274	11.61	186,471	9.20
Batch QCMS	KWG1100975-1	389,902	5.76	147,319	11.61	182,444	9.20
Batch QCDMS	KWG1100975-2	391,348	5.76	149,224	11.61	182,287	9.20
Method Blank	KWG1100975-4	399,883	5.76	148,744	11.61	184,783	9.20
Batch QC	K1100710-005	387,417	5.76	142,063	11.61	179,925	9.20
MW-3	K1100692-001	391,055	5.76	146,542	11.61	182,403	9.20
MW-7	K1100692-002	392,446	5.76	146,099	11.61	185,618	9.20
EB-012511	K1100692-003	384,675	5.76	143,516	11.61	184,679	9.20
Trip Blank	K1100692-004	378,436	5.76	143,210	11.61	179,573	9.20

Results flagged with an asterisk (*) indicate values outside control criteria.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Extracted:**	01/28/2011
Sample Matrix:	Water	**Date Analyzed:**	01/28/2011

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1100710-005	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624	**Extraction Lot:**	KWG1100975

Analyte Name	Sample Result	Batch QCMS KWG1100975-1 Matrix Spike			Batch QCDMS KWG1100975-2 Duplicate Matrix Spike			%Rec Limits	RPD	RPD Limit
		Result	Expected	%Rec	Result	Expected	%Rec			
1,1-Dichloroethene	ND	12.5	10.0	125	12.1	10.0	121	64-151	4	30
Benzene	ND	12.3	10.0	123	11.8	10.0	118	61-145	5	30
Trichloroethene (TCE)	ND	11.9	10.0	119	11.3	10.0	113	23-193	6	30
Toluene	0.13	12.4	10.0	123	12.0	10.0	119	69-137	3	30
Chlorobenzene	ND	10.7	10.0	107	10.6	10.0	106	76-128	2	30
1,2-Dichlorobenzene	ND	10.9	10.0	109	10.7	10.0	107	71-135	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Extracted:**	01/28/2011
Sample Matrix:	Water	**Date Analyzed:**	01/28/2011

Lab Control Spike Summary
Volatile Organic Compounds

Extraction Method:	METHOD	**Units:**	ug/L
Analysis Method:	624	**Basis:**	NA
		Level:	Low
		Extraction Lot:	KWG1100975

	Lab Control Sample KWG1100975-3 Lab Control Spike			
Analyte Name	**Result**	**Expected**	**%Rec**	**%Rec Limits**
Chloromethane	11.5	10.0	115	66-139
Vinyl Chloride	10.9	10.0	109	71-136
Bromomethane	11.6	10.0	116	61-154
Chloroethane	11.1	10.0	111	69-130
Trichlorofluoromethane	10.0	10.0	100	65-127
1,1-Dichloroethene	11.7	10.0	117	79-147
Methylene Chloride	11.2	10.0	112	67-144
trans-1,2-Dichloroethene	11.6	10.0	116	78-140
1,1-Dichloroethane	11.5	10.0	115	79-135
Chloroform	12.0	10.0	120	81-136
1,1,1-Trichloroethane (TCA)	11.4	10.0	114	77-139
Carbon Tetrachloride	10.9	10.0	109	69-144
Benzene	11.8	10.0	118	81-140
1,2-Dichloroethane (EDC)	12.4	10.0	124	74-140
Trichloroethene (TCE)	11.2	10.0	112	81-133
1,2-Dichloropropane	11.5	10.0	115	80-134
Bromodichloromethane	11.7	10.0	117	80-136
2-Chloroethyl Vinyl Ether	12.0	10.0	120	61-141
trans-1,3-Dichloropropene	8.72	10.0	87	73-122
Toluene	11.9	10.0	119	80-139
cis-1,3-Dichloropropene	11.0	10.0	110	77-137
1,1,2-Trichloroethane	10.7	10.0	107	87-129
Tetrachloroethene (PCE)	10.2	10.0	102	82-129
Dibromochloromethane	10.2	10.0	102	82-128
Chlorobenzene	10.5	10.0	105	87-126
Ethylbenzene	10.2	10.0	102	86-128
m,p-Xylenes	20.8	20.0	104	85-129
o-Xylene	10.4	10.0	104	89-125
Bromoform	9.45	10.0	95	61-144
1,1,2,2-Tetrachloroethane	11.6	10.0	116	78-144
1,3-Dichlorobenzene	10.9	10.0	109	78-142
1,4-Dichlorobenzene	10.9	10.0	109	77-144
1,2-Dichlorobenzene	10.7	10.0	107	77-143
Acrolein	110	100	110	27-200
Acrylonitrile	12.0	10.0	120	82-138

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Extracted:**	01/28/2011
Sample Matrix:	Water	**Date Analyzed:**	01/28/2011
		Time Analyzed:	16:36

Method Blank Summary
Volatile Organic Compounds

Sample Name:	Method Blank	**File ID:**	J:\MS23\DATA\012811\0128F007.D
Lab Code:	KWG1100975-4	**Instrument ID:**	MS23
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624	**Extraction Lot:**	KWG1100975

This Method Blank applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Lab Control Sample	KWG1100975-3	J:\MS23\DATA\012811\0128F004.D	01/28/11	14:26
Batch QCMS	KWG1100975-1	J:\MS23\DATA\012811\0128F005.D	01/28/11	15:39
Batch QCDMS	KWG1100975-2	J:\MS23\DATA\012811\0128F006.D	01/28/11	16:07
Batch QC	K1100710-005	J:\MS23\DATA\012811\0128F011.D	01/28/11	18:31
MW-3	K1100692-001	J:\MS23\DATA\012811\0128F013.D	01/28/11	19:29
MW-7	K1100692-002	J:\MS23\DATA\012811\0128F014.D	01/28/11	19:57
EB-012511	K1100692-003	J:\MS23\DATA\012811\0128F015.D	01/28/11	20:26
Trip Blank	K1100692-004	J:\MS23\DATA\012811\0128F016.D	01/28/11	20:55

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Extracted:**	01/28/2011
Sample Matrix:	Water	**Date Analyzed:**	01/28/2011
		Time Analyzed:	14:26

Lab Control Sample Summary
Volatile Organic Compounds

Sample Name:	Lab Control Sample	**File ID:**	J:\MS23\DATA\012811\0128F004.D
Lab Code:	KWG1100975-3	**Instrument ID:**	MS23
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624	**Extraction Lot:**	KWG1100975

This Lab Control Sample applies to the following analyses:

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed
Batch QCMS	KWG1100975-1	J:\MS23\DATA\012811\0128F005.D	01/28/11	15:39
Batch QCDMS	KWG1100975-2	J:\MS23\DATA\012811\0128F006.D	01/28/11	16:07
Method Blank	KWG1100975-4	J:\MS23\DATA\012811\0128F007.D	01/28/11	16:36
Batch QC	K1100710-005	J:\MS23\DATA\012811\0128F011.D	01/28/11	18:31
MW-3	K1100692-001	J:\MS23\DATA\012811\0128F013.D	01/28/11	19:29
MW-7	K1100692-002	J:\MS23\DATA\012811\0128F014.D	01/28/11	19:57
EB-012511	K1100692-003	J:\MS23\DATA\012811\0128F015.D	01/28/11	20:26
Trip Blank	K1100692-004	J:\MS23\DATA\012811\0128F016.D	01/28/11	20:55

Organic Analysis:
Volatile Organic Compounds

Validation Package

Raw Data

REVISED
12:27 pm, Mar 30, 2011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901
Sample Matrix: Water

Service Request: K1100692
Date Collected: 01/25/2011
Date Received: 01/26/2011

Volatile Organic Compounds

Sample Name: MW-3
Lab Code: K1100692-001

Units: ug/L
Basis: NA

Extraction Method: METHOD
Analysis Method: 624

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Vinyl Chloride	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Bromomethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Chloroethane	ND	U	5.0	0.25	1	01/28/11	01/28/11	KWG1100975	
Trichlorofluoromethane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethene	ND	U	5.0	0.18	1	01/28/11	01/28/11	KWG1100975	
Methylene Chloride	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
trans-1,2-Dichloroethene	ND	U	5.0	0.21	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Chloroform	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Carbon Tetrachloride	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Benzene	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloroethane (EDC)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
Trichloroethene (TCE)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloropropane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Bromodichloromethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
2-Chloroethyl Vinyl Ether	ND	U	10	0.31	1	01/28/11	01/28/11	KWG1100975	
trans-1,3-Dichloropropene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Toluene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
cis-1,3-Dichloropropene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
1,1,2-Trichloroethane	ND	U	5.0	0.23	1	01/28/11	01/28/11	KWG1100975	
Tetrachloroethene (PCE)	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Dibromochloromethane	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Chlorobenzene	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Ethylbenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
m,p-Xylenes	ND	U	5.0	0.29	1	01/28/11	01/28/11	KWG1100975	
o-Xylene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Bromoform	ND	U	5.0	0.43	1	01/28/11	01/28/11	KWG1100975	
1,1,2,2-Tetrachloroethane	ND	U	5.0	0.28	1	01/28/11	01/28/11	KWG1100975	
1,3-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,4-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichlorobenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
Acrolein†	ND	U	50	2.9	1	01/28/11	01/28/11	KWG1100975	

Comments:

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	01/25/2011
Sample Matrix:	Water	**Date Received:**	01/26/2011

Volatile Organic Compounds

Sample Name:	MW-3	**Units:**	ug/L
Lab Code:	K1100692-001	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acrylonitrile†	ND	U	10	0.43	1	01/28/11	01/28/11	KWG1100975	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	107	72-122	01/28/11	Acceptable
4-Bromofluorobenzene	100	70-120	01/28/11	Acceptable
Dibromofluoromethane	106	61-121	01/28/11	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901
Sample Matrix: Water

Service Request: K1100692
Date Collected: 01/25/2011
Date Received: 01/26/2011

Volatile Organic Compounds

Sample Name: MW-7
Lab Code: K1100692-002

Extraction Method: METHOD
Analysis Method: 624

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Vinyl Chloride	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Bromomethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Chloroethane	ND	U	5.0	0.25	1	01/28/11	01/28/11	KWG1100975	
Trichlorofluoromethane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethene	ND	U	5.0	0.18	1	01/28/11	01/28/11	KWG1100975	
Methylene Chloride	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
trans-1,2-Dichloroethene	ND	U	5.0	0.21	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Chloroform	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Carbon Tetrachloride	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Benzene	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloroethane (EDC)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
Trichloroethene (TCE)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloropropane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Bromodichloromethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
2-Chloroethyl Vinyl Ether	ND	U	10	0.31	1	01/28/11	01/28/11	KWG1100975	
trans-1,3-Dichloropropene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Toluene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
cis-1,3-Dichloropropene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
1,1,2-Trichloroethane	ND	U	5.0	0.23	1	01/28/11	01/28/11	KWG1100975	
Tetrachloroethene (PCE)	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Dibromochloromethane	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Chlorobenzene	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Ethylbenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
m,p-Xylenes	ND	U	5.0	0.29	1	01/28/11	01/28/11	KWG1100975	
o-Xylene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Bromoform	ND	U	5.0	0.43	1	01/28/11	01/28/11	KWG1100975	
1,1,2,2-Tetrachloroethane	ND	U	5.0	0.28	1	01/28/11	01/28/11	KWG1100975	
1,3-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,4-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichlorobenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
Acrolein†	ND	U	50	2.9	1	01/28/11	01/28/11	KWG1100975	

Comments:

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	01/25/2011
Sample Matrix:	Water	**Date Received:**	01/26/2011

Volatile Organic Compounds

Sample Name:	MW-7	**Units:**	ug/L
Lab Code:	K1100692-002	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acrylonitrile†	ND	U	10	0.43	1	01/28/11	01/28/11	KWG1100975	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	107	72-122	01/28/11	Acceptable
4-Bromofluorobenzene	95	70-120	01/28/11	Acceptable
Dibromofluoromethane	105	61-121	01/28/11	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	01/25/2011
Sample Matrix:	Water	**Date Received:**	01/26/2011

Volatile Organic Compounds

Sample Name:	EB-012511	**Units:**	ug/L
Lab Code:	K1100692-003	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Vinyl Chloride	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Bromomethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Chloroethane	ND	U	5.0	0.25	1	01/28/11	01/28/11	KWG1100975	
Trichlorofluoromethane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethene	ND	U	5.0	0.18	1	01/28/11	01/28/11	KWG1100975	
Methylene Chloride	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
trans-1,2-Dichloroethene	ND	U	5.0	0.21	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Chloroform	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Carbon Tetrachloride	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Benzene	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloroethane (EDC)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
Trichloroethene (TCE)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloropropane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Bromodichloromethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
2-Chloroethyl Vinyl Ether	ND	U	10	0.31	1	01/28/11	01/28/11	KWG1100975	
trans-1,3-Dichloropropene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Toluene	**0.28**	J	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
cis-1,3-Dichloropropene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
1,1,2-Trichloroethane	ND	U	5.0	0.23	1	01/28/11	01/28/11	KWG1100975	
Tetrachloroethene (PCE)	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Dibromochloromethane	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Chlorobenzene	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Ethylbenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
m,p-Xylenes	ND	U	5.0	0.29	1	01/28/11	01/28/11	KWG1100975	
o-Xylene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Bromoform	ND	U	5.0	0.43	1	01/28/11	01/28/11	KWG1100975	
1,1,2,2-Tetrachloroethane	ND	U	5.0	0.28	1	01/28/11	01/28/11	KWG1100975	
1,3-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,4-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichlorobenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
Acrolein†	ND	U	50	2.9	1	01/28/11	01/28/11	KWG1100975	

Comments:

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	01/25/2011
Sample Matrix:	Water	**Date Received:**	01/26/2011

Volatile Organic Compounds

Sample Name:	EB-012511	**Units:**	ug/L
Lab Code:	K1100692-003	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acrylonitrile†	ND	U	10	0.43	1	01/28/11	01/28/11	KWG1100975	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	106	72-122	01/28/11	Acceptable
4-Bromofluorobenzene	98	70-120	01/28/11	Acceptable
Dibromofluoromethane	107	61-121	01/28/11	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	01/25/2011
Sample Matrix:	Water	**Date Received:**	01/26/2011

Volatile Organic Compounds

Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	K1100692-004	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Vinyl Chloride	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Bromomethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Chloroethane	ND	U	5.0	0.25	1	01/28/11	01/28/11	KWG1100975	
Trichlorofluoromethane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethene	ND	U	5.0	0.18	1	01/28/11	01/28/11	KWG1100975	
Methylene Chloride	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
trans-1,2-Dichloroethene	ND	U	5.0	0.21	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Chloroform	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Carbon Tetrachloride	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Benzene	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloroethane (EDC)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
Trichloroethene (TCE)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloropropane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Bromodichloromethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
2-Chloroethyl Vinyl Ether	ND	U	10	0.31	1	01/28/11	01/28/11	KWG1100975	
trans-1,3-Dichloropropene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Toluene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
cis-1,3-Dichloropropene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
1,1,2-Trichloroethane	ND	U	5.0	0.23	1	01/28/11	01/28/11	KWG1100975	
Tetrachloroethene (PCE)	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Dibromochloromethane	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Chlorobenzene	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Ethylbenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
m,p-Xylenes	ND	U	5.0	0.29	1	01/28/11	01/28/11	KWG1100975	
o-Xylene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Bromoform	ND	U	5.0	0.43	1	01/28/11	01/28/11	KWG1100975	
1,1,2,2-Tetrachloroethane	ND	U	5.0	0.28	1	01/28/11	01/28/11	KWG1100975	
1,3-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,4-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichlorobenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
Acrolein†	ND	U	50	2.9	1	01/28/11	01/28/11	KWG1100975	

Comments:

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	01/25/2011
Sample Matrix:	Water	**Date Received:**	01/26/2011

Volatile Organic Compounds

Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	K1100692-004	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acrylonitrile†	ND	U	10	0.43	1	01/28/11	01/28/11	KWG1100975	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	107	72-122	01/28/11	Acceptable
4-Bromofluorobenzene	98	70-120	01/28/11	Acceptable
Dibromofluoromethane	106	61-121	01/28/11	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901
Sample Matrix: Water

Service Request: K1100692
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Method Blank
Lab Code: KWG1100975-4

Extraction Method: METHOD
Analysis Method: 624

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Vinyl Chloride	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Bromomethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Chloroethane	ND	U	5.0	0.25	1	01/28/11	01/28/11	KWG1100975	
Trichlorofluoromethane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethene	ND	U	5.0	0.18	1	01/28/11	01/28/11	KWG1100975	
Methylene Chloride	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
trans-1,2-Dichloroethene	ND	U	5.0	0.21	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Chloroform	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Carbon Tetrachloride	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Benzene	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloroethane (EDC)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
Trichloroethene (TCE)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloropropane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Bromodichloromethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
2-Chloroethyl Vinyl Ether	ND	U	10	0.31	1	01/28/11	01/28/11	KWG1100975	
trans-1,3-Dichloropropene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Toluene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
cis-1,3-Dichloropropene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
1,1,2-Trichloroethane	ND	U	5.0	0.23	1	01/28/11	01/28/11	KWG1100975	
Tetrachloroethene (PCE)	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Dibromochloromethane	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Chlorobenzene	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Ethylbenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
m,p-Xylenes	ND	U	5.0	0.29	1	01/28/11	01/28/11	KWG1100975	
o-Xylene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Bromoform	ND	U	5.0	0.43	1	01/28/11	01/28/11	KWG1100975	
1,1,2,2-Tetrachloroethane	ND	U	5.0	0.28	1	01/28/11	01/28/11	KWG1100975	
1,3-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,4-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichlorobenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
Acrolein†	ND	U	50	2.9	1	01/28/11	01/28/11	KWG1100975	

Comments:

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1100975-4	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acrylonitrile†	ND	U	10	0.43	1	01/28/11	01/28/11	KWG1100975	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	105	72-122	01/28/11	Acceptable
4-Bromofluorobenzene	102	70-120	01/28/11	Acceptable
Dibromofluoromethane	106	61-121	01/28/11	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1100710-005	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	**0.22**	J	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Vinyl Chloride	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Bromomethane	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Chloroethane	ND	U	5.0	0.25	1	01/28/11	01/28/11	KWG1100975	
Trichlorofluoromethane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethene	ND	U	5.0	0.18	1	01/28/11	01/28/11	KWG1100975	
Methylene Chloride	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
trans-1,2-Dichloroethene	ND	U	5.0	0.21	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Chloroform	**2.2**	J	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
1,1,1-Trichloroethane (TCA)	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Carbon Tetrachloride	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Benzene	ND	U	5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloroethane (EDC)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
Trichloroethene (TCE)	ND	U	5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloropropane	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Bromodichloromethane	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
2-Chloroethyl Vinyl Ether	ND	U	10	0.31	1	01/28/11	01/28/11	KWG1100975	
trans-1,3-Dichloropropene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Toluene	**0.13**	J	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
cis-1,3-Dichloropropene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
1,1,2-Trichloroethane	ND	U	5.0	0.23	1	01/28/11	01/28/11	KWG1100975	
Tetrachloroethene (PCE)	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Dibromochloromethane	ND	U	5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Chlorobenzene	ND	U	5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Ethylbenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
m,p-Xylenes	ND	U	5.0	0.29	1	01/28/11	01/28/11	KWG1100975	
o-Xylene	ND	U	5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Bromoform	ND	U	5.0	0.43	1	01/28/11	01/28/11	KWG1100975	
1,1,2,2-Tetrachloroethane	ND	U	5.0	0.28	1	01/28/11	01/28/11	KWG1100975	
1,3-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,4-Dichlorobenzene	ND	U	5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichlorobenzene	ND	U	5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
Acrolein†	ND	U	50	2.9	1	01/28/11	01/28/11	KWG1100975	

Comments:

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Batch QC	**Units:**	ug/L
Lab Code:	K1100710-005	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acrylonitrile†	ND	U	10	0.43	1	01/28/11	01/28/11	KWG1100975	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	104	72-122	01/28/11	Acceptable
4-Bromofluorobenzene	98	70-120	01/28/11	Acceptable
Dibromofluoromethane	105	61-121	01/28/11	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901
Sample Matrix: Water

Service Request: K1100692
Date Collected: NA
Date Received: NA

Volatile Organic Compounds

Sample Name: Batch QCMS
Lab Code: KWG1100975-1

Extraction Method: METHOD
Analysis Method: 624

Units: ug/L
Basis: NA

Level: Low

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	**13.7**		5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Vinyl Chloride	**11.8**		5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Bromomethane	**12.0**		5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Chloroethane	**11.9**		5.0	0.25	1	01/28/11	01/28/11	KWG1100975	
Trichlorofluoromethane	**10.7**		5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethene	**12.5**		5.0	0.18	1	01/28/11	01/28/11	KWG1100975	
Methylene Chloride	**11.2**		5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
trans-1,2-Dichloroethene	**12.4**		5.0	0.21	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethane	**12.1**		5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Chloroform	**14.5**		5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
1,1,1-Trichloroethane (TCA)	**12.3**		5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Carbon Tetrachloride	**11.8**		5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Benzene	**12.3**		5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloroethane (EDC)	**12.5**		5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
Trichloroethene (TCE)	**11.9**		5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloropropane	**11.6**		5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Bromodichloromethane	**12.0**		5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
2-Chloroethyl Vinyl Ether	ND	U	10	0.31	1	01/28/11	01/28/11	KWG1100975	
trans-1,3-Dichloropropene	**9.03**		5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Toluene	**12.4**		5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
cis-1,3-Dichloropropene	**11.1**		5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
1,1,2-Trichloroethane	**11.3**		5.0	0.23	1	01/28/11	01/28/11	KWG1100975	
Tetrachloroethene (PCE)	**10.9**		5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Dibromochloromethane	**10.4**		5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Chlorobenzene	**10.7**		5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Ethylbenzene	**10.7**		5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
m,p-Xylenes	**20.9**		5.0	0.29	1	01/28/11	01/28/11	KWG1100975	
o-Xylene	**10.6**		5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Bromoform	**10.4**		5.0	0.43	1	01/28/11	01/28/11	KWG1100975	
1,1,2,2-Tetrachloroethane	**11.8**		5.0	0.28	1	01/28/11	01/28/11	KWG1100975	
1,3-Dichlorobenzene	**11.1**		5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,4-Dichlorobenzene	**11.0**		5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichlorobenzene	**10.9**		5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
Acrolein†	**104**		50	2.9	1	01/28/11	01/28/11	KWG1100975	

Comments:

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Batch QCMS	**Units:**	ug/L
Lab Code:	KWG1100975-1	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acrylonitrile†	**12.3**		10	0.43	1	01/28/11	01/28/11	KWG1100975	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	109	72-122	01/28/11	Acceptable
4-Bromofluorobenzene	99	70-120	01/28/11	Acceptable
Dibromofluoromethane	105	61-121	01/28/11	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Batch QCDMS	**Units:**	ug/L
Lab Code:	KWG1100975-2	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	**12.7**		5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Vinyl Chloride	**10.9**		5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Bromomethane	**11.2**		5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Chloroethane	**11.0**		5.0	0.25	1	01/28/11	01/28/11	KWG1100975	
Trichlorofluoromethane	**9.99**		5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethene	**12.1**		5.0	0.18	1	01/28/11	01/28/11	KWG1100975	
Methylene Chloride	**11.2**		5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
trans-1,2-Dichloroethene	**11.6**		5.0	0.21	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethane	**11.6**		5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Chloroform	**13.8**		5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
1,1,1-Trichloroethane (TCA)	**11.7**		5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Carbon Tetrachloride	**11.3**		5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Benzene	**11.8**		5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloroethane (EDC)	**12.1**		5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
Trichloroethene (TCE)	**11.3**		5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloropropane	**11.5**		5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Bromodichloromethane	**11.7**		5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
2-Chloroethyl Vinyl Ether	ND	U	10	0.31	1	01/28/11	01/28/11	KWG1100975	
trans-1,3-Dichloropropene	**8.94**		5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Toluene	**12.0**		5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
cis-1,3-Dichloropropene	**10.8**		5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
1,1,2-Trichloroethane	**10.9**		5.0	0.23	1	01/28/11	01/28/11	KWG1100975	
Tetrachloroethene (PCE)	**10.5**		5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Dibromochloromethane	**10.3**		5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Chlorobenzene	**10.6**		5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Ethylbenzene	**10.2**		5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
m,p-Xylenes	**18.7**		5.0	0.29	1	01/28/11	01/28/11	KWG1100975	
o-Xylene	**9.95**		5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Bromoform	**10.1**		5.0	0.43	1	01/28/11	01/28/11	KWG1100975	
1,1,2,2-Tetrachloroethane	**11.8**		5.0	0.28	1	01/28/11	01/28/11	KWG1100975	
1,3-Dichlorobenzene	**10.7**		5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,4-Dichlorobenzene	**10.6**		5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichlorobenzene	**10.7**		5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
Acrolein†	**90.0**		50	2.9	1	01/28/11	01/28/11	KWG1100975	

Comments:

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Batch QCDMS	**Units:**	ug/L
Lab Code:	KWG1100975-2	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acrylonitrile†	**12.5**		10	0.43	1	01/28/11	01/28/11	KWG1100975	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	107	72-122	01/28/11	Acceptable
4-Bromofluorobenzene	102	70-120	01/28/11	Acceptable
Dibromofluoromethane	102	61-121	01/28/11	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Results

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Lab Control Sample	**Units:**	ug/L
Lab Code:	KWG1100975-3	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Chloromethane	**11.5**		5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Vinyl Chloride	**10.9**		5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Bromomethane	**11.6**		5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
Chloroethane	**11.1**		5.0	0.25	1	01/28/11	01/28/11	KWG1100975	
Trichlorofluoromethane	**10.0**		5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethene	**11.7**		5.0	0.18	1	01/28/11	01/28/11	KWG1100975	
Methylene Chloride	**11.2**		5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
trans-1,2-Dichloroethene	**11.6**		5.0	0.21	1	01/28/11	01/28/11	KWG1100975	
1,1-Dichloroethane	**11.5**		5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Chloroform	**12.0**		5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
1,1,1-Trichloroethane (TCA)	**11.4**		5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Carbon Tetrachloride	**10.9**		5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Benzene	**11.8**		5.0	0.20	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloroethane (EDC)	**12.4**		5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
Trichloroethene (TCE)	**11.2**		5.0	0.17	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichloropropane	**11.5**		5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Bromodichloromethane	**11.7**		5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
2-Chloroethyl Vinyl Ether	**12.0**		10	0.31	1	01/28/11	01/28/11	KWG1100975	
trans-1,3-Dichloropropene	**8.72**		5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
Toluene	**11.9**		5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
cis-1,3-Dichloropropene	**11.0**		5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
1,1,2-Trichloroethane	**10.7**		5.0	0.23	1	01/28/11	01/28/11	KWG1100975	
Tetrachloroethene (PCE)	**10.2**		5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Dibromochloromethane	**10.2**		5.0	0.19	1	01/28/11	01/28/11	KWG1100975	
Chlorobenzene	**10.5**		5.0	0.16	1	01/28/11	01/28/11	KWG1100975	
Ethylbenzene	**10.2**		5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
m,p-Xylenes	**20.8**		5.0	0.29	1	01/28/11	01/28/11	KWG1100975	
o-Xylene	**10.4**		5.0	0.15	1	01/28/11	01/28/11	KWG1100975	
Bromoform	**9.45**		5.0	0.43	1	01/28/11	01/28/11	KWG1100975	
1,1,2,2-Tetrachloroethane	**11.6**		5.0	0.28	1	01/28/11	01/28/11	KWG1100975	
1,3-Dichlorobenzene	**10.9**		5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,4-Dichlorobenzene	**10.9**		5.0	0.13	1	01/28/11	01/28/11	KWG1100975	
1,2-Dichlorobenzene	**10.7**		5.0	0.12	1	01/28/11	01/28/11	KWG1100975	
Acrolein†	**110**		50	2.9	1	01/28/11	01/28/11	KWG1100975	

Comments:

Client:	Exponent	**Service Request:**	K1100692
Project:	Heglar Kronquist/0907194.000.0901	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA

Volatile Organic Compounds

Sample Name:	Lab Control Sample	**Units:**	ug/L
Lab Code:	KWG1100975-3	**Basis:**	NA
Extraction Method:	METHOD	**Level:**	Low
Analysis Method:	624		

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Note
Acrylonitrile†	**12.0**		10	0.43	1	01/28/11	01/28/11	KWG1100975	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Note
Toluene-d8	109	72-122	01/28/11	Acceptable
4-Bromofluorobenzene	102	70-120	01/28/11	Acceptable
Dibromofluoromethane	106	61-121	01/28/11	Acceptable

† Analyte Comments

Acrolein	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.
Acrylonitrile	This compound is unstable under normal conditions. As per EPA Method 624 guidelines, the reported value was an estimate.

Comments:

Organic Analysis:
Volatile Organic Compounds

Validation Package

Standards Data

REVISED
12:28 pm, Mar 30, 2011

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Date Analyzed: 01/28/2011
Time Analyzed: 13:28

Tune Summary
Volatile Organic Compounds

File ID: J:\MS23\DATA\012811\0128F002.D
Instrument ID: MS23
Column:

Analysis Method: 624
Analysis Lot: KWG1100972

Target Mass	Relative to Mass	Lower Limit%	Upper Limit%	Relative Abundance %	Raw Abundance	Result Pass/Fail
50	95	15	40	25.5	10507	PASS
75	95	30	60	58.0	23949	PASS
95	95	100	100	100.0	41258	PASS
96	95	5	9	7.5	3101	PASS
173	174	0	2	0.4	122	PASS
174	95	50	120	69.9	28840	PASS
175	174	5	9	5.3	1523	PASS
176	174	95	101	96.8	27917	PASS
177	176	5	9	7.1	1978	PASS

Sample Name	Lab Code	File ID	Date Analyzed	Time Analyzed	Q
Continuing Calibration Verification	KWG1100972-2	J:\MS23\DATA\012811\0128F003.D	01/28/2011	13:57	
Lab Control Sample	KWG1100975-3	J:\MS23\DATA\012811\0128F004.D	01/28/2011	14:26	
Batch QCMS	KWG1100975-1	J:\MS23\DATA\012811\0128F005.D	01/28/2011	15:39	
Batch QCDMS	KWG1100975-2	J:\MS23\DATA\012811\0128F006.D	01/28/2011	16:07	
Method Blank	KWG1100975-4	J:\MS23\DATA\012811\0128F007.D	01/28/2011	16:36	
Batch QC	K1100710-005	J:\MS23\DATA\012811\0128F011.D	01/28/2011	18:31	
MW-3	K1100692-001	J:\MS23\DATA\012811\0128F013.D	01/28/2011	19:29	
MW-7	K1100692-002	J:\MS23\DATA\012811\0128F014.D	01/28/2011	19:57	
EB-012511	K1100692-003	J:\MS23\DATA\012811\0128F015.D	01/28/2011	20:26	
Trip Blank	K1100692-004	J:\MS23\DATA\012811\0128F016.D	01/28/2011	20:55	

Results flagged with an asterisk (*) indicate the analysis performed outside specified tune window

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Calibration Date: 01/12/2011

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL10216
Instrument ID: MS23

Column: MS

Level ID	File ID
A	J:\MS23\DATA\011211\0112F005.D
B	J:\MS23\DATA\011211\0112F006.D
C	J:\MS23\DATA\011211\0112F007.D
D	J:\MS23\DATA\011211\0112F008.D
E	J:\MS23\DATA\011211\0112F009.D
F	J:\MS23\DATA\011211\0112F010.D
G	J:\MS23\DATA\011211\0112F011.D

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Chloromethane	A	0.50	0.438	B	1.0	0.371	C	5.0	0.392	D	10	0.479	E	40	0.394
	F	80	0.423	G	120	0.442									
Vinyl Chloride	A	0.50	0.359	B	1.0	0.373	C	5.0	0.416	D	10	0.437	E	40	0.434
	F	80	0.434	G	120	0.428									
Bromomethane	A	0.50	0.0820	B	1.0	0.0966	C	5.0	0.100	D	10	0.155	E	40	0.178
	F	80	0.193	G	120	0.188									
Chloroethane	A	0.50	0.0746	B	1.0	0.0627	C	5.0	0.0674	D	10	0.0721	E	40	0.0676
	F	80	0.0666	G	120	0.0657									
Trichlorofluoromethane	A	0.50	0.427	B	1.0	0.454	C	5.0	0.524	D	10	0.508	E	40	0.525
	F	80	0.500	G	120	0.471									
1,1-Dichloroethene	A	0.50	0.198	B	1.0	0.186	C	5.0	0.213	D	10	0.206	E	40	0.219
	F	80	0.215	G	120	0.210									
Methylene Chloride	A	0.50	0.323	B	1.0	0.274	C	5.0	0.250	D	10	0.259	E	40	0.246
	F	80	0.248	G	120	0.249									
trans-1,2-Dichloroethene	A	0.50	0.235	B	1.0	0.228	C	5.0	0.253	D	10	0.255	E	40	0.264
	F	80	0.263	G	120	0.260									
1,1-Dichloroethane	A	0.50	0.445	B	1.0	0.463	C	5.0	0.515	D	10	0.525	E	40	0.527
	F	80	0.525	G	120	0.524									
Chloroform	A	0.50	0.429	B	1.0	0.430	C	5.0	0.454	D	10	0.470	E	40	0.471
	F	80	0.473	G	120	0.471									
1,1,1-Trichloroethane (TCA)	A	0.50	0.312	B	1.0	0.300	C	5.0	0.359	D	10	0.371	E	40	0.397
	F	80	0.410	G	120	0.412									
Carbon Tetrachloride	A	0.50	0.209	B	1.0	0.208	C	5.0	0.236	D	10	0.250	E	40	0.283
	F	80	0.307	G	120	0.319									
Benzene	A	0.50	0.981	B	1.0	1.01	C	5.0	1.08	D	10	1.10	E	40	1.10
	F	80	1.09	G	120	1.08									
1,2-Dichloroethane (EDC)	A	0.50	0.315	B	1.0	0.337	C	5.0	0.354	D	10	0.366	E	40	0.359
	F	80	0.356	G	120	0.355									
Trichloroethene (TCE)	A	0.50	0.245	B	1.0	0.243	C	5.0	0.262	D	10	0.264	E	40	0.269
	F	80	0.271	G	120	0.274									

Results flagged with an asterisk (*) indicate values outside control criteria.

† **SPCC Compound** ‡ **CCC Compound**

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Calibration Date: 01/12/2011

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL10216
Instrument ID: MS23

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
1,2-Dichloropropane	A	0.50	0.263	B	1.0	0.272	C	5.0	0.275	D	10	0.279	E	40	0.285
	F	80	0.284	G	120	0.285									
Bromodichloromethane	A	0.50	0.262	B	1.0	0.251	C	5.0	0.274	D	10	0.292	E	40	0.316
	F	80	0.327	G	120	0.334									
2-Chloroethyl Vinyl Ether	A	0.50	0.0991	B	1.0	0.0909	C	5.0	0.103	D	10	0.120	E	40	0.118
	F	80	0.121	G	120	0.122									
trans-1,3-Dichloropropene	A	0.50	0.567	B	1.0	0.611	C	5.0	0.675	D	10	0.705	E	40	0.799
	F	80	0.832	G	120	0.828									
Toluene	A	0.50	0.547	B	1.0	0.578	C	5.0	0.640	D	10	0.655	E	40	0.659
	F	80	0.659	G	120	0.658									
cis-1,3-Dichloropropene	A	0.50	0.284	B	1.0	0.314	C	5.0	0.357	D	10	0.374	E	40	0.399
	F	80	0.417	G	120	0.423									
1,1,2-Trichloroethane	A	0.50	0.306	B	1.0	0.338	C	5.0	0.352	D	10	0.366	E	40	0.368
	F	80	0.369	G	120	0.360									
Tetrachloroethene (PCE)	A	0.50	0.364	B	1.0	0.383	C	5.0	0.457	D	10	0.432	E	40	0.470
	F	80	0.474	G	120	0.468									
Dibromochloromethane	A	0.50	0.303	B	1.0	0.292	C	5.0	0.319	D	10	0.346	E	40	0.406
	F	80	0.444	G	120	0.450									
Chlorobenzene	A	0.50	1.39	B	1.0	1.46	C	5.0	1.53	D	10	1.57	E	40	1.60
	F	80	1.60	G	120	1.55									
Ethylbenzene	A	0.50	0.699	B	1.0	0.754	C	5.0	0.851	D	10	0.863	E	40	0.910
	F	80	0.915	G	120	0.898									
m,p-Xylenes	A	1.0	0.815	B	2.0	0.935	C	10	1.05	D	20	1.09	E	80	1.13
	F	160	1.13	G	240	1.12									
o-Xylene	A	0.50	0.779	B	1.0	0.864	C	5.0	0.989	D	10	1.03	E	40	1.08
	F	80	1.08	G	120	1.05									
Bromoform	A	0.50	0.157	B	1.0	0.115	C	5.0	0.130	D	10	0.139	E	40	0.176
	F	80	0.204	G	120	0.213									
1,1,2,2-Tetrachloroethane	A	0.50	0.537	B	1.0	0.475	C	5.0	0.461	D	10	0.480	E	40	0.476
	F	80	0.483	G	120	0.459									
1,3-Dichlorobenzene	A	0.50	1.20	B	1.0	1.25	C	5.0	1.31	D	10	1.33	E	40	1.36
	F	80	1.37	G	120	1.37									
1,4-Dichlorobenzene	A	0.50	1.25	B	1.0	1.32	C	5.0	1.33	D	10	1.37	E	40	1.37
	F	80	1.37	G	120	1.36									
1,2-Dichlorobenzene	A	0.50	1.13	B	1.0	1.23	C	5.0	1.17	D	10	1.21	E	40	1.21
	F	80	1.22	G	120	1.21									

Results flagged with an asterisk (*) indicate values outside control criteria.

† **SPCC Compound** ‡ **CCC Compound**

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Calibration Date: 01/12/2011

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL10216
Instrument ID: MS23

Column: MS

Analyte Name	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF	Level ID	Amt	RRF
Acrolein	A	10	0.0258	B	20	0.0277	C	100	0.0271	D	200	0.0253	E	800	0.0281
	F	1600	0.0272	G	2400	0.0254									
Acrylonitrile	A	1.0	0.0713	B	2.0	0.0595	C	10	0.0598	D	20	0.0632	E	80	0.0629
	F	160	0.0627	G	240	0.0634									
Toluene-d8	A	4.0	0.840	B	6.0	0.885	C	8.0	0.905	D	10	0.919	E	20	0.916
	F	40	0.912	G	60	0.951									
4-Bromofluorobenzene	A	4.0	0.719	B	6.0	0.755	C	8.0	0.783	D	10	0.795	E	20	0.794
	F	40	0.797	G	60	0.770									
Dibromofluoromethane	A	4.0	0.208	B	6.0	0.214	C	8.0	0.223	D	10	0.224	E	20	0.226
	F	40	0.229	G	60	0.233									

Results flagged with an asterisk (*) indicate values outside control criteria.

† **SPCC Compound** ‡ **CCC Compound**

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Calibration Date: 01/12/2011

Initial Calibration Summary
Volatile Organic Compounds

Calibration ID: CAL10216
Instrument ID: MS23

Column: MS

Analyte Name	Compound Type	Calibration Evaluation					RRF Evaluation		
		Fit Type	Eval.	Eval. Result	Q	Control Criteria	Average RRF	Q	Minimum RRF
Chloromethane	TRG	AverageRF	% RSD	8.8		≤35	0.420		0.01
Vinyl Chloride	TRG	AverageRF	% RSD	7.9		≤35	0.411		0.01
Bromomethane	TRG	AverageRF	% RSD	33.6		≤35	0.142		0.01
Chloroethane	TRG	AverageRF	% RSD	5.9		≤35	0.0681		0.01
Trichlorofluoromethane	TRG	AverageRF	% RSD	7.7		≤35	0.487		0.01
1,1-Dichloroethene	MS	AverageRF	% RSD	5.5		≤35	0.207		0.01
Methylene Chloride	TRG	AverageRF	% RSD	10.5		≤35	0.264		0.01
trans-1,2-Dichloroethene	TRG	AverageRF	% RSD	5.6		≤35	0.251		0.01
1,1-Dichloroethane	TRG	AverageRF	% RSD	6.8		≤35	0.503		0.01
Chloroform	TRG	AverageRF	% RSD	4.3		≤35	0.457		0.01
1,1,1-Trichloroethane (TCA)	TRG	AverageRF	% RSD	12.4		≤35	0.366		0.01
Carbon Tetrachloride	TRG	AverageRF	% RSD	17.4		≤35	0.259		0.01
Benzene	MS	AverageRF	% RSD	4.5		≤35	1.06		0.01
1,2-Dichloroethane (EDC)	TRG	AverageRF	% RSD	4.9		≤35	0.349		0.01
Trichloroethene (TCE)	MS	AverageRF	% RSD	4.8		≤35	0.261		0.01
1,2-Dichloropropane	TRG	AverageRF	% RSD	3.0		≤35	0.278		0.01
Bromodichloromethane	TRG	AverageRF	% RSD	11.2		≤35	0.294		0.01
2-Chloroethyl Vinyl Ether	TRG	AverageRF	% RSD	11.5		≤35	0.111		0.01
trans-1,3-Dichloropropene	TRG	AverageRF	% RSD	14.8		≤35	0.717		0.01
Toluene	MS	AverageRF	% RSD	7.4		≤35	0.628		0.01
cis-1,3-Dichloropropene	TRG	AverageRF	% RSD	14.3		≤35	0.367		0.01
1,1,2-Trichloroethane	TRG	AverageRF	% RSD	6.5		≤35	0.351		0.01
Tetrachloroethene (PCE)	TRG	AverageRF	% RSD	10.4		≤35	0.435		0.01
Dibromochloromethane	TRG	AverageRF	% RSD	18.2		≤35	0.366		0.01
Chlorobenzene	MS	AverageRF	% RSD	5.1		≤35	1.53		0.01
Ethylbenzene	TRG	AverageRF	% RSD	9.9		≤35	0.841		0.01
m,p-Xylenes	TRG	AverageRF	% RSD	11.6		≤35	1.04		0.01
o-Xylene	TRG	AverageRF	% RSD	11.8		≤35	0.982		0.01
Bromoform	TRG	AverageRF	% RSD	22.9		≤35	0.162		0.01
1,1,2,2-Tetrachloroethane	TRG	AverageRF	% RSD	5.4		≤35	0.482		0.01
1,3-Dichlorobenzene	TRG	AverageRF	% RSD	5.1		≤35	1.31		0.01
1,4-Dichlorobenzene	TRG	AverageRF	% RSD	3.2		≤35	1.34		0.01
1,2-Dichlorobenzene	MS	AverageRF	% RSD	2.8		≤35	1.20		0.01
Acrolein	TRG	AverageRF	% RSD	4.3		≤35	0.0266		0.01
Acrylonitrile	TRG	AverageRF	% RSD	6.2		≤35	0.0633		0.01
Toluene-d8	SURR	AverageRF	% RSD	3.8		≤35	0.904		0.01
4-Bromofluorobenzene	SURR	AverageRF	% RSD	3.7		≤35	0.773		0.01
Dibromofluoromethane	SURR	AverageRF	% RSD	3.9		≤35	0.223		0.01

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound

‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Calibration Date: 01/12/2011
Date Analyzed: 01/12/2011

Second Source Calibration Verification
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 624

Calibration ID: CAL10216
Units: PPB

File ID: J:\MS23\DATA\011211\0112F014.D

Analyte Name	Expected	Result	Average RF	SSV RF	%D	%Drift	Criteria	Curve Fit
Chloromethane	10	9.1	0.420	0.381	-9	NA	± 104 %	AverageRF
Vinyl Chloride	10	11	0.411	0.437	6	NA	± 96 %	AverageRF
Bromomethane	10	14	0.142	0.201	42	NA	± 86 %	AverageRF
Chloroethane	10	10	0.0681	0.0695	2	NA	± 62 %	AverageRF
Trichlorofluoromethane	10	9.2	0.487	0.446	-8	NA	± 52 %	AverageRF
1,1-Dichloroethene	10	12	0.207	0.241	17	NA	± 49 %	AverageRF
Methylene Chloride	10	11	0.264	0.281	6	NA	± 39 %	AverageRF
trans-1,2-Dichloroethene	10	11	0.251	0.288	15	NA	± 30 %	AverageRF
1,1-Dichloroethane	10	11	0.503	0.565	12	NA	± 27 %	AverageRF
Chloroform	10	11	0.457	0.516	13	NA	± 32 %	AverageRF
1,1,1-Trichloroethane (TCA)	10	11	0.366	0.419	15	NA	± 25 %	AverageRF
Carbon Tetrachloride	10	11	0.259	0.290	12	NA	± 27 %	AverageRF
Benzene	10	11	1.06	1.20	13	NA	± 36 %	AverageRF
1,2-Dichloroethane (EDC)	10	11	0.349	0.399	14	NA	± 32 %	AverageRF
Trichloroethene (TCE)	10	11	0.261	0.289	11	NA	± 33 %	AverageRF
1,2-Dichloropropane	10	11	0.278	0.306	10	NA	± 66 %	AverageRF
Bromodichloromethane	10	11	0.294	0.332	13	NA	± 34 %	AverageRF
2-Chloroethyl Vinyl Ether	10	11	0.111	0.122	10	NA	± 124 %	AverageRF
trans-1,3-Dichloropropene	10	11	0.717	0.758	6	NA	± 50 %	AverageRF
Toluene	10	11	0.628	0.708	13	NA	± 25 %	AverageRF
cis-1,3-Dichloropropene	10	11	0.367	0.415	13	NA	± 76 %	AverageRF
1,1,2-Trichloroethane	10	12	0.351	0.412	17	NA	± 29 %	AverageRF
Tetrachloroethene (PCE)	10	12	0.435	0.502	15	NA	± 26 %	AverageRF
Dibromochloromethane	10	11	0.366	0.414	13	NA	± 32 %	AverageRF
Chlorobenzene	10	11	1.53	1.72	13	NA	± 34 %	AverageRF
Ethylbenzene	10	11	0.841	0.950	13	NA	± 41 %	AverageRF
m,p-Xylenes	20	22	1.04	1.14	10	NA	± 40 %	AverageRF
o-Xylene	10	11	0.982	1.11	13	NA	± 40 %	AverageRF
Bromoform	10	11	0.162	0.173	7	NA	± 29 %	AverageRF
1,1,2,2-Tetrachloroethane	10	11	0.482	0.551	14	NA	± 39 %	AverageRF
1,3-Dichlorobenzene	10	12	1.31	1.51	15	NA	± 27 %	AverageRF
1,4-Dichlorobenzene	10	12	1.34	1.56	17	NA	± 37 %	AverageRF
1,2-Dichlorobenzene	10	11	1.20	1.36	14	NA	± 37 %	AverageRF
Acrolein	100	94	0.0266	0.0250	-6	NA	± 80 %	AverageRF
Acrylonitrile	10	10	0.0633	0.0657	4	NA	± 40 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Results

Client: Exponent
Project: Heglar Kronquist/0907194.000.0901

Service Request: K1100692
Date Analyzed: 01/28/2011

Continuing Calibration Verification Summary
Volatile Organic Compounds

Calibration Type: Internal Standard
Analysis Method: 624

Calibration Date: 01/12/2011
Calibration ID: CAL10216
Analysis Lot: KWG1100972
Units: PPB

File ID: J:\MS23\DATA\012811\0128F003.D

Analyte Name	Expected	Result	Min RF	Average RF	CCV RF	%D	%Drift	Criteria	Curve Fit
Chloromethane	10	11	0.01	0.420	0.482	15	NA	± 104 %	AverageRF
Vinyl Chloride	10	11	0.01	0.411	0.438	7	NA	± 96 %	AverageRF
Bromomethane	10	9.1	0.01	0.142	0.129	-9	NA	± 86 %	AverageRF
Chloroethane	10	11	0.01	0.0681	0.0756	11	NA	± 62 %	AverageRF
Trichlorofluoromethane	10	11	0.01	0.487	0.558	15	NA	± 52 %	AverageRF
1,1-Dichloroethene	10	11	0.01	0.207	0.231	12	NA	± 49 %	AverageRF
Methylene Chloride	10	11	0.01	0.264	0.283	7	NA	± 39 %	AverageRF
trans-1,2-Dichloroethene	10	11	0.01	0.251	0.282	12	NA	± 30 %	AverageRF
1,1-Dichloroethane	10	11	0.01	0.503	0.571	13	NA	± 27 %	AverageRF
Chloroform	10	11	0.01	0.457	0.515	13	NA	± 32 %	AverageRF
1,1,1-Trichloroethane (TCA)	10	11	0.01	0.366	0.399	9	NA	± 25 %	AverageRF
Carbon Tetrachloride	10	10	0.01	0.259	0.267	3	NA	± 27 %	AverageRF
Benzene	10	11	0.01	1.06	1.20	13	NA	± 36 %	AverageRF
1,2-Dichloroethane (EDC)	10	12	0.01	0.349	0.402	15	NA	± 32 %	AverageRF
Trichloroethene (TCE)	10	11	0.01	0.261	0.289	11	NA	± 33 %	AverageRF
1,2-Dichloropropane	10	11	0.01	0.278	0.305	10	NA	± 66 %	AverageRF
Bromodichloromethane	10	11	0.01	0.294	0.328	12	NA	± 34 %	AverageRF
2-Chloroethyl Vinyl Ether	10	11	0.01	0.111	0.119	7	NA	± 124 %	AverageRF
trans-1,3-Dichloropropene	10	9.0	0.01	0.717	0.641	-11	NA	± 50 %	AverageRF
Toluene	10	11	0.01	0.628	0.704	12	NA	± 25 %	AverageRF
cis-1,3-Dichloropropene	10	11	0.01	0.367	0.388	6	NA	± 76 %	AverageRF
1,1,2-Trichloroethane	10	10	0.01	0.351	0.361	3	NA	± 29 %	AverageRF
Tetrachloroethene (PCE)	10	10	0.01	0.435	0.441	1	NA	± 26 %	AverageRF
Dibromochloromethane	10	9.5	0.01	0.366	0.348	-5	NA	± 32 %	AverageRF
Chlorobenzene	10	10	0.01	1.53	1.53	0	NA	± 34 %	AverageRF
Ethylbenzene	10	10	0.01	0.841	0.856	2	NA	± 41 %	AverageRF
m,p-Xylenes	20	21	0.01	1.04	1.06	3	NA	± 40 %	AverageRF
o-Xylene	10	10	0.01	0.982	0.987	1	NA	± 40 %	AverageRF
Bromoform	10	8.4	0.01	0.162	0.136	-16	NA	± 29 %	AverageRF
1,1,2,2-Tetrachloroethane	10	9.8	0.01	0.482	0.473	-2	NA	± 39 %	AverageRF
1,3-Dichlorobenzene	10	9.5	0.01	1.31	1.24	-5	NA	± 27 %	AverageRF
1,4-Dichlorobenzene	10	9.5	0.01	1.34	1.28	-5	NA	± 37 %	AverageRF
1,2-Dichlorobenzene	10	9.3	0.01	1.20	1.11	-7	NA	± 37 %	AverageRF
Acrolein	200	190	0.01	0.0266	0.0255	-4	NA	± 80 %	AverageRF
Acrylonitrile	20	23	0.01	0.0633	0.0717	13	NA	± 40 %	AverageRF
Toluene-d8	10	11	0.01	0.904	1.00	11	NA	± 30 %	AverageRF
4-Bromofluorobenzene	10	11	0.01	0.773	0.837	8	NA	± 30 %	AverageRF
Dibromofluoromethane	10	11	0.01	0.223	0.235	5	NA	± 30 %	AverageRF

Results flagged with an asterisk (*) indicate values outside control criteria.

† SPCC Compound ‡ CCC Compound